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CONFERENCE PROCEEDING - 1st STUDENT SCIENTIFIC CONFERENCE OF THE BRAZILIAN ASSOCIATION FOR RESEARCH AND POSTGRADUATE IN PHYSIOTHERAPY (ABRAPG-FT)

1

PHOTOBIOMODULATION MAY REVERSE CELLULAR SENESCENCE BY INDUCING CELL PROLIFERATION AND PRESERVING NUCLEAR SIZE

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Background: Cellular senescence is an irreversible state of cell cycle arrest, thus being characterized by decreased cell proliferation and increased nucleus area, often acting as a tumor suppressor program. Photobiomodulation (PBM) has been used in several conditions to increase the mitochondrial response, promoting nuclear changes and cell proliferation. However, the effects of PBM on cells are still unclear.
Objectives: To verify the efficacy of photobiomodulation on cell senescence processes.
Methods: We utilized A172 glioblastoma cells transduced with H2B-mCherry by lentivirus to nuclear tagging. Treatment was done with GaAlAs Laser (850nm). Cells were divided by intensity into the following groups: C= Control, L1= 1J/cm^2, L2= 2.2J/cm^2, L3= 3J/cm^2, L9= 9J/cm^2, L15= 15J/cm^2, L21= 21J/cm^2, nuclear evaluation was performed at experimental times (0h, 24h, 48h and 72h). For data analysis, two-way ANOVA with the Tukey post hoc test was used. Differences were significant when $p<0.05$.
Results: PBM on intensities of 1J/cm^2, 2.2J/cm^2, 3J/cm^2, 9J/cm^2 e 15J/cm^2 showed a lower increase at the nuclear size when compared with time 0h and 72h in the control group. All intensities (1, 2.2, 3, 9, 15, and 21 J/cm^2) promoted cellular proliferation after 72 hours, while 15J/cm^2 presented an accentuated increase compared to groups L1, L2.2, and L3.
Conclusion: PBM enhanced cellular proliferation while causing a reduced nuclear increase in glioblastoma cells.
Implications: In this study, we found that the laser decreased the cellular senescence state from the evaluation of the morphological parameters, thus increasing cell proliferation and decreasing the nuclear area; therefore, it is an important therapeutic tool against the cellular aging process.
Keywords: Photobiomodulation, Glioblastoma, Cellular senescence

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not applicable.

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2

PHYSICAL EXERCISE AND PHOTOBIOMODULATION INCREASE NRF2 EXPRESSION IN THE SKELETAL MUSCLE OF RATS WITH HEART FAILURE AND DIABETES MELLITUS

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Background: Heart failure (HF) and type 2 diabetes mellitus (DM2) are prevalent diseases worldwide, and both can cause muscle atrophy. Both disorders are related to increased autophagy and apoptosis in muscle cells, consequently reducing muscle volume. Physical exercise associated with photobiomodulation seems promising to attenuate the skeletal muscle changes caused by HF and DM2.
Objectives: To verify the influence of physical exercise and the association with photobiomodulation on autophagy, apoptosis, and cell survival signaling pathways in myocytes from rats with HF and DM2.
Methods: 18 male rats were divided into four groups: CT (not included in protocols), CT- (HF + DM2), EX+HF+D (HF + DM2 + aerobic exercise), and EX+HF+D+P (HF + DM2 + aerobic exercise + photobiomodulation). To induce DM2, streptozotocin (0.25 ml/kg, i.p.) was injected. To induce HF, coronary ligation was performed. After one week of disease induction, aerobic exercise, and photobiomodulation protocol were started for eight weeks. The protein expressions

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analyzed by the western blot were BAX, CASPASE-3, CASPASE-9, ANEXIN-V, P-ASK, MTOR, BECLIN-1, P62, LC3-I, LC3-II, NRF2 and P-AKT.
Results: The apoptosis proteins BAX (p=0.13), CASPASE-3 (p=0.62), CASPASE-9 (p=0.20), ANEXIN-V (p=0.85), and P-ASK (p=0.71), as well as autophagy proteins - MTOR (p=0.71), BECLIN-1 (p=0.58), P62 (p=0.70) and LC3-II (p=0.16) did not show statistical significance among groups. EX+HF+D+P group expressed increased NRF2 (p=0.04), p-AKT (p=0.03), and LC3I (p=0.005) expression compared to the CT- group.
Conclusion: We demonstrated the positive effects of physical exercise associated with photobiomodulation, increasing the expression of proteins related to myocyte survival.
Implications: In this study, we observed an increase in Nrf2 levels in animals that performed physical exercise related to photobiomodulation, demonstrating a protective effect of the association of these two protocols on the gastrocnemius of animals with HF and DM. These results are relevant since there is a lack of therapeutic agents that may mitigate the muscle damage related to the association of DM and HF. Therefore, we suggest that the association between therapies can revert possible changes involving cell death.
Keywords: Photobiomodulation, Heart failure, Diabetes mellitus type II

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Committee for Ethical Use of Animals (CEUA) of the Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA), Rio Grande do Sul, Brazil, Ethical Approval number: 655/19.

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3

PRELIMINARY CONTENT VALIDITY OF THE BRAZILIAN VERSION OF THE PEDIATRIC RATING OF CHRONIC ILLNESS SELF-EFFICACY (PRCISE)

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Background: Content validity is the degree to which the content of an instrument is an adequate reflection of the construct to be measured. It can be assessed by patients or specialists during the development or cross-cultural adaptation (CTA) of measurement instruments. In this sense, the Pediatric Rating of Chronic Illness Self-Efficacy (PRCISE) is a self-efficacy questionnaire for pediatric patients with chronic conditions, which is being adapted and validated in Brazil, but its content validity has not yet been evaluated.
Objectives: To assess the preliminary content validity of the Brazilian version of the PRCISE in children and adolescents with chronic respiratory conditions.
Methods: Exploratory methodological study in which the TCA protocol was elaborated according to internationally established recommendations, involving translation, back-translation, expert committee and pre-test procedures. The pre-test of the Brazilian version of the PRCISE was performed on a sample of 30 children and adolescents of both sexes, aged 7 to 18 years, and diagnosed with isolated asthma, cystic fibrosis, or other chronic respiratory conditions. To determine content validity, subjects participated in virtual interviews using Google Meet and evaluated the questionnaire for item clarity, comprehensibility, relevance, and comprehensiveness. In the data analysis, the Content Validity Index (CVI) was used, adopting values ≥ 0.78 for each item as a reference.
Results: The sample consisted of 15 individuals with asthma and 15 individuals with cystic fibrosis, with a mean age of 12.3 ± 2.8 years, 53.3% male, 66.7% elementary school students, and 56.7% from the Northeast region of Brazil. In the assessment of the questionnaire, all 15 items had a CVI ≥ 0.78, with values ranging from 0.93 to 1.00, and 60% of the items had CVI = 0.96, demonstrating good content validity. Items 2 and 15, related respectively to the domains of obtaining and humor, were more difficult for the participants to understand (CVI = 0.93). The illness management domain obtained CVI = 0.63 and, therefore, will be modified according to the participants' suggestions and assessed in a new evaluation round.
Conclusion: The Brazilian version of the PRCISE presented good preliminary content validity by assessing children and adolescents with chronic respiratory conditions. The illness management domain did not reach the recommended value and will be modified and reassessed by participants.
Implications: Based on these results, we have the basis for further establishing the content validity of the Brazilian version of the PRCISE for children and adolescents with chronic respiratory conditions. Furthermore, this is the first step to analyzing the psychometric properties of this instrument and to determine if it provides valid and reliable measures before being used in clinical practice.
Keywords: Respiratory diseases, Self-efficacy, Validation study

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Acknowledgment: Not applicable.
Ethics committee approval: Research Ethics Committee of the Faculty of Health Sciences of Trairi – UFRN/FACISA (No. 5,467,687)

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4

PHYSICAL THERAPY EXERCISE IN EARLY AND LATE POST-OPERATIVE PERIOD OF TOTAL KNEE ARTHROPLASTY: SYSTEMATIC REVIEW WITH META-ANALYSIS

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Background: Objective: To analyze the effects of exercise-based rehabilitation on the functionality of individuals with Total Knee Arthroplasty (TKA) in the early and late postoperative period.
Methods: Systematic review of which studies were selected through six databases (Pubmed, PEDro, LILACS, EMBASE, CINAHL, and Cochrane Library) from January 2010 to August 2020. Only randomized clinical trials of primary unilateral TKA in the early or late postoperative period were included. All meta-analyses were conducted using Review Manager – RevMane software described as standardized mean differences with 95% confidence intervals (CI). Outcome data, including the final mean, standard deviation, and sample size values, were extracted by two reviewers. The data extraction process was performed using a standardized form and disagreements were resolved by a more experienced third author. PROSPERO Register: CRD42020200375.
Results: Five studies were chosen for full-text review. The main findings of this study demonstrated that physical therapy exercise,

when compared to the other conditions, was effective only for the timed up and go test (three studies, n=225; MD=-1.38, 95% CI [-2.35, -0.41]; p=0.005; I^2=56%). No significant differences were observed for the other analyses.
Conclusion: The findings of the present study demonstrate that physical therapy based on exercises, when started mainly in the early postoperative period of TKA is better than the comparison conditions in knee functionality.
Implications: The present review shows the clinical applicability of physiotherapeutic exercises started early after TKA, which can improve the functional conditions of patients.
Keywords: Arthroplasty, Knee, Replacement, Exercise Therapy, Postoperative Care

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Ethics committee approval: Not applicable.

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5

BODY BALANCE IN INDIVIDUALS WITH OSTEOARTHRITIS OF THE HIP AND KNEE, BEFORE AND AFTER GROUP PHYSIOTHERAPY INTERVENTION PROTOCOL

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Background: Osteoarthritis (OA) is a slow and progressive musculoskeletal disorder that primarily affects the hip and knee joints. As a result, it leads to loss of flexibility, pain, reduced range of motion, and affects gait and body balance, resulting in functional dependence and reduced quality of life for individuals. Physical therapy based on exercises is considered the best treatment option due to its favorable cost-benefit ratio, helping to reduce pain and improve physical function, gait, and body balance. Additionally, studies suggest that group physical therapy has proven beneficial as it utilizes fewer resources, thereby reducing costs, offering greater interaction among patients, and achieving similar results to individual treatment.
Objectives: This study aimed to evaluate the effects of a group exercise protocol on static and dynamic body balance in individuals with knee and hip osteoarthritis.
Methods: A clinical trial was conducted with patients diagnosed with knee and/or hip OA, who were able to walk independently and scored above 25 on the Lower Extremity Functional Scale (LEFS). The assessment instruments included the LEFS functionality questionnaire, Visual Analogue Scale (VAS) for pain assessment, Agility and Dynamic Balance Test (ÁGIL), and Stabilometry using an electronic baropodometer (FootWalk Pro®, AM CUBE, France), where participants maintained a bipedal position without support for 30 seconds. The intervention protocol consisted of 10 group kinesiotherapy sessions, conducted twice a week, with progressive exercises. The first week focused on mobility exercises involving active movements of the lower limbs, ballistic stretching, oscillations, and adopting different positions. The second week they emphasized mobility and resistance, incorporating shin pads and active lower limb exercises. In the third week, the focus was on resistance with higher intensity compared to the previous week. The fourth week they included resistance and functional exercises simulating musculoskeletal strain during daily activities. The fifth week involved functional exercises with increased intensity and additional balance training. Data were presented as means and standard deviations, and comparisons were made using dependent sample tests determined by the Kolmogorov-Smirnov test with the assistance of SPSS software (version 19.0) at a significance level of 5%.
Results: The sample comprised 27 participants, 20 women (74%) and seven men (26%), and a mean age of 64.19±8.33 years. After accounting for sample loss between the first and second evaluation moments (after intervention), there were 18 participants available for comparison tests. The results showed a significant 17% improvement in functional capacity and a 44% reduction in pain during movement.
Conclusion: The five-week group exercise protocol improved pain and functionality in this sample; however, it did not lead to significant changes in static and dynamic body balance parameters.
Implications: This study demonstrates the clinical applicability of group exercises, which can improve pain and function in patients with knee and/or hip osteoarthritis, thereby reducing costs and enhancing the efficiency of care in clinics.
Keywords: Osteoarthritis, Balance, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
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6

THE INTRODUCTION OF NEW TECHNOLOGIES APPLIED TO THE CITIZEN SCIENCE METHOD IN SCIENTIFIC PROJECTS IN HEALTH: AN INTEGRATIVE REVIEW

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Background: Citizen Science (CC) refers to the collaboration of volunteers, amateur scientists, non-professional scientists (citizens), and those without academic training in a project or research of a scientific nature, actively contributing to science. In public health, research with the CC method is recent, in small numbers and samples, proving particularly useful, especially with the recent introduction of new technologies (NT). These NT help collect and analyze population health data, encourage the involvement of community members, and promote greater interaction, contribution, and discussions in solving the scientific problem that directly impacts a community's health and/or well-being.
Objectives: To describe the main studies in the literature and their findings on the incorporation of new technologies in health research applied to the citizen science method.
Methods: We carried out an integrative review of articles published up to 2021, extracting the location, the most used technology, and its results on the health of the individual or the environment in which he lives.
Results: Fourteen studies were found in 5 countries, mostly American (42.8%) and European (35.7%), with 92.8% using information and communication technology (applications) on mobile devices (smartphones) for data collection and recording of the studied population. All studies presented important findings regarding the training of individuals in the collection, analysis, monitoring, and health promotion of the studied population.

Conclusion: Research using the CC method was carried out, in greater numbers, in developed countries, demonstrating the involvement and importance of the participation of the lay public (citizen scientists) of these nationalities in the promotion of health research, facilitated and improved through new technologies. These studies pointed to the positive and significant impact of these technologies not only on data collection and analysis but also on the perceptions of empowerment, autonomy, and the collective environment of the individuals involved, promoting greater interaction and contribution to discussions in solving the scientific problem that impacts health. and/or the well-being of a community.
Implications: The CC method associated with new technologies proves to be an important tool in monitoring the health of the community and the environment in which it lives, as well as in formulating proposals for public policies for improvements.
Keywords: Citizen Participation in Science and Technology, Public Perception of Science, Technology and Innovation in Health

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ANTICIPATORY SYNERGY ADJUSTMENTS: A NARRATIVE REVIEW OF STUDIES USING THE UNCONTROLLED MANIFOLD APPROACH IN INDIVIDUALS WITH NEUROLOGICAL DYSFUNCTIONS

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Background: According to the Uncontrolled Manifold (UCM) approach, motor synergies allow motor flexibility while ensuring stable task performance. The stronger the motor synergies, the greater performance stabilization. Thus, just before the start of a new motor task, the synergies need to be attenuated to facilitate the initiation or change of movement. This reduction in synergy during the preparation for movement initiation is called Anticipatory Synergy Adjustments (ASAs). In individuals with neurological deficits, changes in the timing or magnitude of ASAs can result in reduced movement agility or greater difficulty initiating a new task. Additionally, altered ASAs can serve as preclinical markers of neurological dysfunctions such as Parkinson's disease or multiple sclerosis.
Objectives: The aim of this study was to characterize the behavior of ASAs in populations with neurological dysfunctions and analyze their clinical implications.
Methods: A narrative review of studies that used the UCM approach to quantify ASAs in individuals with neurological dysfunctions was conducted.
Results: The review resulted in the inclusion of 9 exploratory studies. The study samples consisted of individuals with Parkinson's disease (PD), olivopontocerebellar atrophy (OA), stroke, multiple sclerosis (MS), and cerebral palsy (CP). The motor tasks analyzed in the studies were divided into manual tasks and standing postural control tasks. In individuals with PD, MS, and OA, delayed and smaller magnitude of ASAs were observed when compared to healthy individuals. In individuals with CP and stroke, ASAs in manual tasks differed from healthy individuals in small magnitudes.
Conclusion: In general, the observed changes in ASAs in the study lead to reduced agility during task execution and greater difficulty initiating new movements.
Implications: The use of the UCM method and the analysis of ASAs appears to be sensitive for the early detection of some neurological conditions and tracking disease progression and intervention effects, especially in individuals with subcortical disorders. However, using UCM to evaluate patients in the clinical context is still challenging. Its application requires specific technology and knowledge, which limits its use to the search environment. It would be interesting if future studies investigated the relationship between the behavior of ASAs and performance in commonly used functional instruments/questionnaires in clinical practice so that the understanding and application of the UCM method in the clinical context can be optimized.
Keywords: Anticipatory synergy adjustments, UCM, Neurological dysfunctions

Conflict of interest: The authors declare no conflict of interest.
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PAIN NEUROSCIENCE EDUCATION IN NECK PAIN MANAGEMENT: A SYSTEMATIC REVIEW

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Background: Neck pain is a worldwide public health problem, highly prevalent, and varies significantly between countries. It is one of the leading causes of disability in the world. It is estimated that half of the world's population will experience an episode of neck pain. On the other hand, compared to other conditions, the number of treatments dedicated to the management of neck pain is relatively low. In comparison with traditional biomechanical models, Pain Neuroscience Education (PNE) is a recent approach, providing the patient with a better understanding of pain and the sensation experienced by him. Considering the heterogeneous nature of each individual and its multidimensionality, it is necessary to use the PNE in a heterogeneous way based on the patient.
Objectives: The purpose of this study was to explore the effectiveness of PNE as a treatment approach for people suffering from chronic neck pain.
Methods: This is a systematic review prospectively registered in PROSPERO (CRD42021283000), following the PRISMA checklist and Cochrane recommendations. Titles and abstracts were screened by independent reviewers, the inclusion criteria were published in the English language, investigating the effects of PNE on neck pain in adult subjects. The third reviewer will resolve discrepancies between reviewers The analysis of the methodological quality of the eligible studies was performed using the PEDro quality scale. Data were analyzed and extracted using the PICO strategy. For data

analysis, the GRADE system was considered. Outcome measures were described in a narrative form.
Results: 2670 studies were identified; 54 were considered potentially relevant and 10 of these were read in full. Finally, five articles met the inclusion criteria. The included studies analyzed the effect of PNE on 516 participants, of which 350 (67.82%) were female and 166 (32.17%) were male. The mean age of patients ranged between 18 and 65 years. The content of the educational sessions included approaches on peripheral sensitization, central sensitization, biopsychosocial factors related to pain, catastrophic thoughts, understanding and accepting pain, coping with pain, catastrophic factors, emotional response to pain, anxiety, fear of harm, concerns/ fear of pain, goal setting, nociceptive inhibition and facilitation, participation in social contexts, pain neurophysiology, general nervous system physiology, coping strategies, stress management, and progressive return to activities. The five studies included in this review addressed the effectiveness of PNE by addressing pain-related issues. The methodological quality ranged from 6 (moderate quality) to 10 (high quality), with an average score of 7.4. The duration of the educational sessions ranged from 30 to 90 minutes, some held in groups and others individually.
Conclusion: The results of this review show that NDT is a promising intervention for neck pain; however, based on the GRADE evidence rating systems, the strength of evidence is low.
Implications: The authors of this review consider that many studies have neglected to characterize the educational intervention and have provided little information about the educational system used. Future research must be done with more rigorous attention to the methods employed.
Keywords: Neck pain, Education, Pain, Cognitive neuroscience

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DOES THE LOWER EXTREMITY MOTOR ACTIVITY LOG FIT THE BIOPSYCHOSOCIAL FUNCTIONING MODEL?

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Background: The misuse of the lower extremities during mobility activities can affect individuals with different health conditions and directly impact their daily routines. Thus, it is essential to assess the performance of individuals in these activities for an accurate diagnosis of the limitation. The Lower Extremity Motor Activity Log (LE-MAL) is an instrument developed to assess the use of the lower extremities in mobility activities. However, how the content of the LE-MAL items is related to the framework of the current biopsychosocial functioning model is unknown.
Objectives: To link the LE-MAL items with the International Classification of Functioning, Disability, and Health (ICF) and identify the contents of the LE-MAL items.
Methods: Concepts within each item of the LE-MAL were linked to the best-matched ICF categories using established linking rules. Two independent researchers performed the initial linkage of the items, and the final consensus was reached after a meeting with the other researchers involved in the study.
Results: Ten concepts were identified. The two-level main concepts identified were d410 (changing basic body position), d450 (walking), d455 (moving around), and d460 (moving around in different locations). All items assess performance through information about need or dependence, personal and environmental factors, and appraisal. All items are covered in the Mobility domain (d4) of the Activity and Participation component. Moderate agreement was obtained between researchers.
Conclusion: The LE-MAL fits into the mobility domain of ICF, and the items' general construct is the performance evaluation. The study highlighted the conceptual connection between the LEMAL and the ICF framework.
Implications: The use of the functioning model proposed as a framework — the ICF, enables the use of the LE-MAL as a tool that supports clinical professionals' use of ICF coding in clinical settings. This allows the common language between professionals and the classification of patients with different conditions. Moreover, the LE-MAL was developed for people with gait dysfunction and might represent a comprehensive way to analyze the lower extremity use during mobility activities in different health conditions.
Keywords: Mobility, Lower extremity, Biopsychosocial model

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10

BODY MASS INDEX PROFILE OF INDIVIDUALS WITH COVID-19 WHO DEVELOPED ARDS AND SUBMITTED TO IMV AND PRONE POSITION

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Background: In 2020, COVID-19 was classified as a global public health emergency. The disease affects individuals of all ages and social classes, with certain populations, such as individuals with obesity, being more susceptible to developing the severe form of the disease, known as acute respiratory distress syndrome (ARDS). Recommended treatments included invasive mechanical ventilation (IMV) and improvement of oxygenation with the prone position. In this context, understanding the body mass index (BMI) profile of patients with COVID-19 who develop moderate or severe ARDS and undergo these therapies is a gap in scientific knowledge.
Objectives: To identify whether individuals with COVID-19 who developed moderate or severe ARDS and underwent IMV and prone position had a characteristic BMI profile.
Methods: Multicenter, analytical observational retrospective cohort study of patients admitted to 5 hospitals in southern Brazil, admitted to intensive care units (ICU) between July 2020 and June 2021. The medical records of individuals who developed ARDS were

analysed as moderate or severe and who underwent IMV and prone position. The BMI of each individual was identified and analysed to identify alterations. Comorbidities were also identified.
Results: 512 individuals were included in the study. 05 (0.9%) had low weight, 119 (23.2%) had normal weight, 183 (35.7%) were overweight, 131 (25.6%) had class I obesity, 44 (8.6%) had class II obesity, and 30 (5.9%) had class III obesity. 307 (59.5%) had a BMI <30 (NOG) and 205 (40.4%) had a BMI >30 (OG). The NOG and OG had similar characteristics concerning sex and height, but age was higher in the NOG ($p<0.01$). The OG had, as expected, higher values of weight and BMI than the NOG ($p<0.01$). The most prevalent comorbidities in hospitalized COVID-19 patients undergoing prone position were diabetes, hypertension, and cardiovascular diseases. Both groups had similar values regarding diabetes and hypertension. Other cardiovascular diseases were more prevalent in the NOG. Regarding the previous lifestyle, both groups had similar values for alcohol consumption (p=0.22) and smoking (p=0.25).
Conclusion: From the results found, it can be concluded that individuals with COVID-19 who developed severe ARDS and underwent IMV, and prone position were from all BMI ranges. However, there was a high proportion of individuals with obesity when considering the BMI of the general population.
Implications: Knowing that COVID-19 affects patients of all BMI ranges, especially obese individuals, is important for individual and collective decision-making in health and serves as a warning for authorities to anticipate adjustments in ICUs to receive this patient profile.
Keywords: Acute Respiratory Distress Syndrome, Invasive Mechanical Ventilation, Obesity

Conflicts of interest: The authors declare no conflict of interest.
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Ethics committee approval: The project was approved by the Research Ethics Committee of the Hospital Irmandade Santa Casa de Misericórdia in Porto Alegre through CAAE 31881520.3.1001.5335 and amendment n° 4.237.704.

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GENDER DIFFERENCES IN THE ASSOCIATION BETWEEN CENTRAL OBESITY AND MOBILITY LIMITATION AMONG OLDER ADULTS: NATIONAL HEALTH SURVEY RESULTS

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Background: The prevalence of obesity has increased substantially in the last decades in the elderly population and, consequently, it has been considered one of the main risk factors for non-communicable diseases in the world. Compared to general obesity, central obesity, which is characterized by excessive accumulation of fat in the abdominal region, has shown a greater association with diabetes and all-cause mortality, in addition to being considered a risk factor for disability in the elderly, regardless of BMI. Some studies suggest that the relationship between central obesity and disability differs according to gender, however, the results are still conflicting.
Objectives: To investigate the association between central obesity and mobility limitation in elderly Brazilians and to assess whether this association was modified by gender.
Methods: This is a cross-sectional, analytical, and quantitative study that used data from the PNS. This is a household-based survey proposed by the Ministry of Health in partnership with the Brazilian Institute of Geography and Statistics (IBGE). For the present study, those aged 60 years or older were considered (n=11,177). Central obesity was defined when waist circumference (WC) was greater than 84 cm in women and 88 cm in men. Participants reported the degree of difficulty to move, being classified as no difficulty versus some difficulty. Binary logistic regression was used to investigate the association between central obesity and mobility limitation adjusted for sex, age, exercise, chronic diseases, self-reported health, and literacy. $P<0.05$ and a 95% confidence interval were considered.
Results: Women were the majority, representing 55.7% of the sample and the mean age was 66.9 $\pm$ 8.07 years. Central obesity was identified in 76.7% of the participants, being more prevalent among older women (60.4%) and 25.9% reported some difficulty with mobility, with a higher prevalence of females (64.8%). Elderly people with central obesity were 1.2 times more likely to have some difficulty with mobility (OR=1.21; 95%CI: 1.08-1.36) compared to elderly people who did not have any difficulty, even after adjusting the covariates. In the analysis stratified by gender, the association between central obesity and mobility limitation was significant among women (OR=1.48; 95%CI: 1.27-1.7; however, it, lost significance among men (OR =0.93;95%CI: 0.78-1.10).
Conclusion: The results suggest that elderly women with central obesity are more likely to have some difficulty with mobility compared to men.
Implications: The high prevalence of central obesity in the Brazilian elderly population, especially in the female public, represents a serious public health problem. Our findings identified a subgroup of the elderly population that is more vulnerable to limited mobility associated with abdominal obesity. Therefore, implementing health actions to prevent or reduce abdominal obesity should be strongly encouraged among elderly women.
Keywords: Abdominal Obesity, Mobility Limitation, Aged

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FUNCTIONALITY OF ONCOLOGICAL PATIENTS IN PALLIATIVE CARE HOSPITALIZED IN A REFERENCE HOSPITAL IN PARÁ

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Background: Palliative care is intended for any patient with a life-threatening illness, ideally combined with curative care, regardless of age and prognosis. This care does not depend on the prognosis and clinical conditions; it is possible to be provided by the same health team. A desire often expressed by patients in palliative care is to remain physically independent until the end of their lives. Performing daily life tasks and maintaining mobility are areas subject to intervention that result in significant gains in quality of life.
Objective: To evaluate the functionality of hospitalized cancer patients under palliative care.
Method: This is a prospective, quantitative, and descriptive study. The functionality of patients hospitalized in the palliative care clinics of Hospital Ophir Loyola, a reference in oncology in Pará, was

evaluated. Patients of both genders, aged over 18 years, were included in the study. The sample was defined by convenience, according to the patient's admission to the oncological palliative care clinics of the HOL after a referral from the surgical clinics, who did not have the capacity for curative treatment under conditions of relapses, metastases, and/or advanced stages of the disease. Those who were unconscious or in disorientation that prevented them from answering alone or with the help of the evaluator and those who died during the hospitalization period were excluded. The research was carried out from July to November 2021. The Palliative Performance Scale (PPS) and Visual Analog Pain Scale (EVA) were applied, characterizing the initial assessment T1. Patients received support from the multidisciplinary team. When starting the hospital discharge and return home programming phase, the final assessment (second stage - T2) and reapplication of the scales were performed.
Result: seven volunteers were included in the research, with a prevalence of males (71.4%), adults aged 30 to 59 years (85.7%), married (71.4%), with low education (85.7% with incomplete 1st grade) and primary location of cancer in the digestive tract (42.8%). The volunteers showed an important improvement in palliative performance within the PPS scale, evolving with a median of 50 at T1 to 70 at T2 (p-0.0019), in pain control measured through the VAS scale from 10 to 0 (p-0.0090).
Conclusion: With this study, it was possible to trace the clinical profile of cancer patients in Palliative Care and attest that a clinic specialized in palliative care manages to control symptoms, reflected in the improvement of pain, palliative performance, demonstrating that specialized palliative care clinics present efficiency in this management.
Keywords: Oncology, Palliative care, Functionality, Pain

Conflict of interest: The authors declare no conflict of interest.
Acknowledgments: Not applicable.
Ethics committee approval: The research began after approval by the Research Ethics Committee of the Hospital Ophir Loyola (HOL) (Process n° 4,768,038).

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RELATIONSHIP BETWEEN CAPABILITY AND PERFORMANCE IN CHILDREN AND ADOLESCENTS WITH CEREBRAL PALSY IN THE FEDERAL DISTRICT

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Background: The child with Cerebral Palsy (CP) presents different ways of locomotion which are influenced by the environment and can act as a facilitator or a barrier. According to the International Classification of Functioning, Disability, and Health (ICF), capacity refers to abilities in a controlled situation and environment and indicates the maximum level of functionality for a given moment, with minimal influence of environmental factors. On the other hand, performance refers to the execution of activities in everyday environments, such as home, school, and community, considering the environment in which the child is inserted. The difference between capacity and performance expresses the impacts of the controlled environment and the customary environment, allowing guidance on what can be modified in the environment to improve performance.
Objectives: To verify the relationship between ability and mobility performance in three different environments in children and adolescents with Cerebral Palsy in the Federal District and surroundings.
Methods: This is a Cross-sectional study. Thirty-eight children, from age 4 to 17 years old (±7.4 years), diagnosed with CP at all five levels of the Gross Motor Function Classification System (GMFCS) were included. Mobility capacity was verified using the Gross Motor Function Measure test score, version 66 (GMFM-66). Performance was evaluated using the Function Mobility Scale (FMS), in the home, school, and community environments, in 8 levels: 6- independent on all surfaces; 5- independent on ground surfaces; 4- uses canes, 3- crutches; 2- walker; 1- wheelchair; N- does not complete the distances; C - crawls. The sample characteristics were analyzed using descriptive statistics. Spearman (r) correlation was performed between GMFM-66 scores and FMS levels in the three environments (home, school, and community). The strengths of the correlations were determined as follows: r=0.00-0.19 very weak correlation, r=0.20-0.39 weak correlation, r=0.40-0.59 moderate correlation, r=0 .60-0.79 strong correlation, r=0.80-1.00 very strong correlation.
Results: 38 children with CP participated, 62% male, 76.5% with bilateral impairment, 26.3% GMFCS V, 15.8% GMFCS IV, 10.5% GMFCS III, 26.3 GMFCS II and 21.1% GMFCS I and 84.2% SUS users (Unified Health System). A strong correlation was found between ability and mobility performance at home ($R = 0.726$; $p < 0.001$), school ($R = 0.726$; $p < 0.001$) and community ($R = 0.680$; $p < 0.001$) environments.
Conclusion: Results of mobility, ability, and performance are strongly correlated in children and adolescents with cerebral palsy aged 4 to 17 years.
Implications: This study demonstrates that children are performing mobility at home, at school, and in the community according to what they are able to accomplish.
Keywords: Cerebral Palsy, Capacity, Performance

Conflict of interest: The authors declare no conflict of interest.
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PHYSICAL ACTIVITY, BARRIERS, AND FACILITATORS IN BREAST CANCER SURVIVORS

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Background: Breast cancer is the most incident cancer in the world and Brazil, with 74,000 new cases estimated in Brazilian women for the three years 2023-2025. The high survival rates make it necessary to rehabilitate comorbidities arising from the treatment to promote quality of life. Physical activity can be an important ally; however, evidence shows that ∼70% do not reach the recommended levels, despite the possibility of reducing relapses and adverse effects of treatment and of improving physical and mental health.
Objectives: The aim of the study was to identify the levels of physical activity of women survivors of breast cancer, barriers, and facilitators for physical activity.

Methods: In this cross-sectional analytical observational study, 31 women answered an online questionnaire. 'Survivors' were considered those who completed treatments (chemotherapy, radiotherapy, and/or surgery) 6 months ago or more. Sociodemographic and oncological characteristics and the International Physical Activity Questionnaire (IPAQ) were questioned. The main barriers and facilitators to the practice of physical activity were also questioned.
Results: The mean age of the women was 49.2 ± 8.4 years (30 − 69 years) and the time since diagnosis was 4.9 ± 3.6 years (1 − 17 years). BMI was 24.9 ± 4.8 (adequate) (17 − 36.7); 75% of the sample resided in urban areas, 66% had completed graduate studies, 22% had completed higher education, 72% were employed, and 22% were retired. Oncological staging at diagnosis w, classified as zero, 12.5% I, 18.8% II, 31.3% III, 9.4% IV,.4% IV, and 6.3% were unable to report. Surgical treatment was used in 97% of cases, 59% underwent radiotherapy, 56% chemotherapy, and 56% hormone therapy. 84.4% of women reported receiving information about physical activity considered relevant after According to the IPAQ-SF (short version), the prevalence of physical activity levels version) was 44% high, 37% rate and 19% low, and 3617.2 ± 3859.6 MET-min/week total. The main barriers to physical activity reported were issues related to employment (28%), the duration and frequency of physical activity (22%), the feeling of fatigue (22%), and lack of motivation to practice (16%); in addition, 13 women reported not perceiving difficulties. The most prevalent facilitators were health promotion (62%) and well-being (53%), the existence of motivation to practice (37.5%), the presence of medical guidance (28%), and the ease of access to practice sites (22%).
Conclusion: The levels of physical activity found were higher than previously reported in the literature, which may be related to the characteristics of the urbanized sample with a high level of education. Although the majority received professional instruction, it is perceived that the barriers were related to daily demands and that the facilitators were the promotion of health and well-being.
Implications: Research with a larger number of women in different contexts is recommended to promote the levels of physical activity suggested in the literature.
Keywords: Physical Activity, Breast Cancer, Women's Health

Conflict of interest: The authors declare no conflict of interest.
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WORK ABSENCE IN HEALTH WORKERS - COMPARATIVE STUDY BEFORE AND DURING THE COVID-19 PANDEMIC

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Background: Several studies have focused on investigating the repercussions of the COVID-19 pandemic. However, in the healthcare workers area, there is still a gap regarding the real impacts of the COVID-19 pandemic on the number of medical records, absences from work, and the main complaints of this population.
Objectives: To compare the prevalence of musculoskeletal disorders and sick leave among health professionals at a university hospital in pre and per-pandemic periods of COVID-19. Secondarily, we aimed to identify the impact of the COVID-19 pandemic on the occurrence of health complaints of these professionals.
Methods: A retrospective longitudinal study was performed with database analysis from health workers at a University Hospital in Rio de Janeiro. Health-related data from the medical records of these professionals were collected. The workers should be employed at least six months before the pandemic and remain in the hospital for up to six months after the pandemic. Data analysis was based in the comparison of work on the comparison of work absences registered in the medical records of these patients. It also analyzed the occurrence of musculoskeletal pain, and health problems self-related by workers (sleep, depression, anxiety, and psychological assistance).
Results: Data from 189 professionals were included in this study. The mean age of the population was 40.9 years (SD 7.8) and 143 employees (75.6%) were women. The average workload was 34 hours per week (SD 5.8). Professionals had on average 3.8 years of working at the hospital (SD 0.62). The professionals who most presented work-related diseases were nursing technicians 56 (29.6%) and administrative assistants 21 (11.1%). There was no significant difference when comparing the mean number of work absence days in the pre-pandemic period, 10.7 days (SD 19.5), and the per-pandemic period, 13.5 days (SD 15.9) (p=0.270). There was also no significant difference when comparing the number of health-related diseases in the same period. However, when observing self-reports on health problems, it was identified that there was interference from the pandemic in the frequency of occurrence of sleep problems (x^2= 26,967; p=0.01), episodes of depression (x^2= 63,087; p=0.01), anxiety attacks (x^2= 67,938; p=0.01) and psychological assistance (x^2=92,706; p=0.01).
Conclusion: There was no difference in the number of work absence days and the number of health-related diseases when comparing the pre-and-pandemic periods. However, it was observed that the pandemic interfered with the occurrence of health complaints.
Implications: The findings indicate that hospital professionals possibly needed to make the decision to work even being sick. Such behavior is also perceived in other work activities and should be more deeply explained by scientific works in the area.
Keywords: Occupational health, COVID-19, Musculoskeletal injury

Conflicts of interest: The authors declare no conflict of interest.
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ASSESSMENT OF ABDOMINAL SUBCUTANEOUS ADIPOSE TISSUE THICKNESS BY ULTRASONOGRAPHY: A STUDY OF INTRA-RATER RELIABILITY

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Background: Body fat distribution is an important risk indicator for cardiovascular and metabolic diseases. Ultrasonography (US) is a non-invasive tool without adverse effects, validated to measure subcutaneous adipose tissue (SAT) however its use is evaluator dependent. To our knowledge, there are no reliable studies that

measure the thickness of the SAT in the supra umbilical scar regions using the US.
Objectives: To evaluate the intra-rater reliability for measuring supra-abdominal SAT thickness in the US in adults.
Methods: We evaluated 44 participants (22 women and 22 men), aged between 20 and 42 years. For each gender, 12 eutrophic and 10 overweight participants were included. The participants were submitted to two days of SAT thickness evaluation, with a difference of 7 days between evaluations, using ultrasound (Ultrasound GE Healthcare Venue 40®). The measurements were performed by a linear transducer with a frequency of 12 MHz, positioned transversally one centimeter above and one centimeter below the umbilical scar. The evaluations were always performed by the same evaluator. Three measurements were taken in each region, and the three measurements' average was used. Intra-rater reliability was evaluated using the intraclass correlation coefficient (ICC). The ICC classification was considered low (<0.50), moderate (0.50-0.75), good (0.75-0.90), and excellent (>0.90) correlation. The level of statistical significance was set at $p<0.05$.
Results: Participants were characterized according to age (females: 25(23-32 years); males: 25(23-29)), body mass (females: 63.85 ± 9.96; males: 78.93 ± 11.03), height (females: 1.62 ± 0.06 and males: 1.77 ± 0.05), and body mass index (females: 24.20 ± 3.47 and males: 25.22 ± 3.30). The supra-abdominal ICC in women was 0.82 (confidence interval = 0.62-0.92), and in men, it was 0.91 (0.81-0.96). The infra-abdominal ICC for women was 0.77 (0.52-0.90) and for men was 0.89 (0.75-0.95). The reliability of the supra-abdominal SAT thickness measurement in women was considered good and in men it was excellent. On the other hand, in the infra-abdominal region, it was considered good for both women and men.
Conclusion: Ultrasonographic assessment for supra and infra-abdominal SAT can be performed in adults. Furthermore, there are differences between the reliability of measurements in the supra-abdominal region in men and women.
Implications: The US is characterized as a safe, cost-effective, and accurate method. Besides being painless, non-invasive, and not exposing individuals to ionizing radiation. Considering that the US is a method highly dependent on the skill of the operator, this study evaluated the intra-rater reliability for assessing the thickness of the abdominal SAT of the supra and infra-abdominal regions in men and women. This amplified assessment can be used to track changes in at-risk populations and throughout aging.
Keywords: Subcutaneous Fat, Abdominal, Obesity Abdominal, Cardiovascular System

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CLINICAL AND FUNCTIONAL EFFECTS OF SUPERVISED AND UNSUPERVISED CARDIOPULMONARY REHABILITATION IN POST-COVID-19 SYNDROME: STUDY PROTOCOL FOR A RANDOMIZED CONTROLLED CLINICAL TRIAL

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Background: COVID-19 is an emerging pandemic disease caused by severe acute respiratory syndrome (SARS-CoV-2), and although most of those infected are asymptomatic or have mild symptoms, some develop severe symptoms that can affect their quality of life—and functional capacity. SARS-CoV-2 leads to the involvement and sequelae of systems, especially the musculoskeletal, in addition to the respiratory system. Some of these symptoms persist for a long period, called post-COVID-19 syndrome, directly interfering with the functional capacity and quality of life of these participants. Cardiopulmonary Rehabilitation exercises are focused on restoring functional capacity in patients affected by cardiopulmonary diseases.
Objectives: To evaluate the clinical and functional effects of a quarterly Cardiopulmonary Rehabilitation exercise program for participants with post-COVID-19 syndrome.
Methods: Randomized controlled clinical trial, with three parallel groups and intention-to-treat analysis. This study will be carried out in Rio de Janeiro, RJ, Brazil. A total of 90 participants will be randomized into three groups, one of which will be a control, one will perform face-to-face Cardiopulmonary Rehabilitation exercises (12 weeks, twice a week), and another with home intervention (12 weeks of exercises guided by a self-explanatory booklet). Recruitment began in July 2022. The control group will be instructed not to carry out any intervention during this period. The expected results will demonstrate the clinical effects of a supervised Cardiopulmonary Rehabilitation program and a self-performed exercise program guided by a validated booklet for handling musculoskeletal disorders and persistent symptoms. The results will be analyzed using mixed linear models of repeated measures. The study is double-blind since neither the volunteers nor the professional who performed the protocol are aware of the objectives and clinical valence that will be measured by the study.
Discussion: The findings of this study will help in clinical decision-making regarding the need to carry out a cardiopulmonary rehabilitation program in person or at home, understanding if it is fundamental for the effectiveness of the treatment of this population.
Trial registration: This trial was prospectively registered in Clinical Trials (NTC20457) in May 2022.
Keywords: COVID-19, Cardiopulmonary Rehabilitation, Everyday activities

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Centro Universitário Augusto Motta (UNISUAM), CAAE 57251222.3.0000.5235; ClinicalTrials.gov- ID NTC20457.

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ASSESSMENT OF EXERCISE CAPACITY IN INDIVIDUALS HOSPITALIZED FOR COVID-19: COMPARISON BETWEEN 30 DAYS AND 12 MONTHS AFTER HOSPITAL DISCHARGE

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Background: The 6-Minute Step Test (6MST) has been used to evaluate exercise capacity and physiological responses during the test in different populations, to assess physical performance for the activity of stepping up and down a step, as well as check for possible symptoms that the individual may present during the test. The use of 6MST to evaluate the exercise capacity of individuals who were

hospitalized for COVID-19 can identify the persistence of symptoms and exercise intolerance.
Objectives: To compare the exercise capacity and physiological responses of individuals hospitalized for COVID-19 using the 6MST, at 30 days and 12 months after hospital discharge.
Methods: A longitudinal study was conducted with individuals hospitalized for COVID-19 and evaluated at two-time points: 30 days after hospital discharge and 12 months after hospital discharge. The 6MST was applied with monitoring of vital signs (blood pressure - BP, heart rate - HR, and peripheral oxygen saturation - SpO2) and recording of perceived pain/fatigue in the lower limbs and respiratory fatigue. At the end of the test, the number of steps executed was recorded to establish the individual's exercise capacity and to identify the percentage of the number of steps achieved according to predicted values for sex, age, height, and weight.
Results: Twenty-three individuals were evaluated, and a significant difference was found in the 6MST performance ($p \leq 0.05$), with a higher number of steps recorded in the evaluation after 12 months of hospital discharge in 82.6% of individuals. Regarding vital signs, there was a statistically significant difference ($p \leq 0.05$) in SpO2 at the peak of the 6MST, with better saturation in the evaluation performed after 12 months of hospital discharge. There was a moderate positive correlation ($R=0.420$, $p \leq 0.046$) between a worse 6MST performance (evaluated by the number of steps) in individuals who required intensive care. There was no statistically significant difference ($p \leq 0.05$) in HR and SpO2 at the peak of the test and in the first minute of recovery.
Conclusion: The exercise capacity verified by the 6MST performance in individuals who were hospitalized and received intensive care due to COVID-19 is significantly lower in the first days after hospital discharge, compared to a period of 12 months after discharge. The 6MST performance was better after 12 months of hospital discharge, indicating improvement in exercise tolerance in 82.6% of individuals. The mean SpO2 measured at the peak of the 6MST was lower in the evaluation at 30 days compared to the assessment at 12 months after hospital discharge. It may be related to lower exercise capacity in individuals affected by COVID-19.
Implications: It is necessary to monitor these individuals affected by COVID-19, and when indicated, they should be included in a pulmonary rehabilitation program with individualized physical training prescription, promoting improvement in exercise capacity and reduction of persistent symptoms.
Keywords: COVID-19, Physiotherapy, Step Test

Conflict of interest: The authors declare no conflict of interest.
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IMPACT OF PHYSICAL ACTIVITY LEVEL ON RESPIRATORY MUSCLE STRENGTH IN PATIENTS WITH POST-COVID-19 SYNDROME

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Background: Patients who survive COVID-19 may experience manifestations after the acute phase of the disease. This condition is known as "long COVID syndrome" and can occur due to complications from hospitalization, sequelae from the acute phase, and other related mechanisms. Patients who are hospitalized, both active and sedentary, may experience loss of muscle mass, including the respiratory muscles. It is known that active individuals have values of Maximal Inspiratory Pressure (MIP) above the population average, which can minimize the damage of muscle loss during hospitalization.
Objectives: To verify if the level of physical activity prior to hospitalization has an impact on the inspiratory muscle strength of patients with long-term COVID-19.
Methods: This is a retrospective study based on a database of a rehabilitation project for patients with long-term COVID-19. The sample consisted of adults from the Midwest region in Brazil diagnosed with COVID-19 who presented persistent symptoms for at least 4 weeks after the onset of symptoms. The patients considering the physical activity were classified as sedentary, irregularly active, and active. MIP was obtained through manovacuometry according to the protocols of the European Respiratory Society/American Thoracic Society. The values obtained were compared with those predicted by Pessoa et al. Normality was evaluated by the Shapiro-Wilk test. The Kruskal-Wallis test was used to assess the difference between the median of the physical activity level groups.
Results: Data from 47 patients were evaluated, with 59.6% female (n=28), mean age of 54.3 ± 10.9 years, weight of 82.2 ± 14.9 kg, height of 163.8 ± 9.3 cm, and 24.2 ± 18.7 days of hospitalization. 63.8% (n=30) of patients were sedentary, 17.0% (n=8) were irregularly active, and 19.1% (n=9) were physically active. The mean MIP obtained was 76.7 ± 25.6 (85.0 ± 28.5% of predicted). There was no difference between the groups in the MIP obtained (p= 0.80) and in the percentage of predicted (p=0.90).
Conclusion: The level of physical activity prior to hospitalization did not impact the respiratory muscle strength of patients with long-term COVID-19. Other factors, such as the number of days hospitalized and physiotherapeutic intervention during hospitalization, have an impact on the maintenance or loss of respiratory muscle strength. As a limitation of the study, the number of days for evaluation after the initial infection is highlighted.
Implications: This analysis reinforces the need to prescribe respiratory muscle training in the hospital environment for all patients, regardless of ess of their prior physical activity history.
Keywords: Maximal Respiratory Pressures, Post-Acute COVID-19 Syndrome, Sedentary Behavior

Conflict of interest: The authors declare no conflict of interest.
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CLINICAL-EPIDEMIOLOGICAL PROFILE OF HOSPITALIZED CHILDREN IN PEDIATRIC INTENSIVE CARE UNIT WITH PHYSIOTHERAPY

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Background: The Pediatric Intensive Care Unit of philanthropic public hospitals belonging to the Unified Health System serves children with the most varied pathologies, clinical and surgical, being a reference for many services in the metropolitan region. Technological advances in health and the improvement of public policies in the prevention, control, and fight against child injuries gradually contribute to reducing infant mortality rates.
Objectives: To identify the epidemiological profile and clinical evolution of children and adolescents hospitalized in the Pediatric Intensive Care Unit of a reference hospital in Natal/RN in physiotherapeutic follow-up.
Methods: Descriptive and retrospective study carried out at the Pediatric Intensive Care Unit of the Hospital Infantil Varela Santiago (reference in Neurosurgical and Oncological care), Natal/RN, through quantitative analysis of data from medical records of children between 0 and 15 years old in physiotherapeutic follow-up in the first quarter of 2023 (January to March). Age, sex, evolution to discharge/death, length of hospital stays, need for mechanical ventilation, and duration of mechanical ventilation were obtained by descriptive and retrospective analysis of medical records, with categorical variables expressed in absolute frequencies and percentages and continuous variables, presented as averages and standard deviation.
Results: Sixty-three (63) children were admitted to Physiotherapy, 34 boys (53.96%) with a mean age of 3.77±4.29 years. The length of stay in the ICU was 14.3 ± 22.8 days; 21 children (33.33%) required invasive mechanical ventilation, with a mean IMV time of 14.8± 17.3 days. As an outcome, 15 children (23.80%) were transferred to other services or discharged straight home, 39 (61.90%) were discharged to the ward, 6 (9.52%) died, and 3 (4.76%) remained hospitalized.
Conclusion: We observed a predominance of male children in this Intensive Care Unit, with an average age of 3.7 years. The length of stay can be correlated with the complexity of the Unit in question (neurosurgical and oncology children), with a mortality rate below 10%.
Implications: Knowledge of the profile of this Unit implies improvement in care, optimization of treatment, reduction of expenses, and length of stay during hospitalization.
Keywords: Pediatric Intensive Care Units, Health Profile, Physical Therapy

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not reported.

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EFFECTS OF NA OPTIMIZED APPROACH TO HOME-BASED RESPIRATORY CARE IN PATIENTS WITH DUCHENNE MUSCULAR DYSTROPHY: STUDY PROTOCOL FOR CLINICAL TRIAL

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Background: Duchenne Muscular Dystrophy (DMD) is an inherited neuromuscular degenerative disease that leaves muscle fibers more susceptible to mechanical stress due to muscle contraction, leading to progressive muscle weakness resulting in decreased lung ventilation and an ineffective cough, favoring the onset of complications such as respiratory failure, the main cause of mortality. Management of patients with DMD aims to maintain respiratory function and involves all aspects of care, including at home.
Objective: This study aims to investigate the effects of an optimal home-based respiratory care protocol in individuals with DMD.
Methods: This is a randomized, blinded controlled trial involving patients with DMD, aged 7 years. Patients will be randomly allocated into the conventional respiratory care (CRC) and optimized respiratory care home-based (ORC) groups. Primary outcomes will be peak cough flow and number of exacerbations. Secondary outcomes will include chest wall volumes, maximal respiratory pressures, nasal inspiratory and expiratory pressure and forced vital capacity (FVC), forced expiratory volume in the 1st second (FEV1) and, FEV1 /FVC. The CRC group will receive education on respiratory care during quarterly hospital visits will consist of guidelines on positioning in bed and during fluid and food ingestion. The caregiver will be trained on aspirating the oral cavity secretions and assisting patients in coughing through air stacking by manual ventilation with a bag and an oronasal mask when needed. The ORC group will receive education on respiratory care during quarterly hospital visits and weekly home visits by a physiotherapist. During the visit, the physiotherapist will provide settings to use and improve non-invasive ventilation, aspiration of upper airways and assisted coughing through air stacking. Both groups will receive weekly telephone calls to monitor patients and provide assistance to minimize complications and exacerbations. All caregivers will be trained to monitor vital signs and peripheral oxygen saturation. A 6-month intervention is planned, the outcomes will be assessed every 3 months, and 3- and 6-month follow-up after the final evaluation.
Results: The primary and secondary results will be described as average or median for continuous variables and absolute and relative frequencies for qualitative variables. Treatment effects or differences between the outcomes (baseline, 3 months, and 6 months) of the study groups will be analyzed using an analysis of variance. The level of significance will be set as $p \leq 0.05$.
Conclusion: individuals with DMD have respiratory complications that gradually worsen and may culminate in death. These patients should receive regular daily respiratory care and assistance from caregivers and family members, as well as professional follow-up to reduce exacerbations. The challenges associated with public health care for patients, as well as the lack of knowledge among health professionals and the community, favor the worsening of DMD and, consequently, the increase in hospitalizations and public spending.
Implications: We hope that the study can demonstrate the importance of home physiotherapy with specialized assistance, which will provide comfort and safety to patients and their families. We believe that a well-implemented therapeutic program will reduce morbidity and mortality rates in patients with DMD.
Keywords: Muscular Dystrophy Duchenne, Neuromuscular Diseases, Physical Therapy

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FACTORS RELATED TO THE RISK OF ABNORMAL GENERAL MOVEMENTS IN PRETERM INFANTS IN A NEONATAL INTENSIVE CARE UNIT: DEVELOPMENT OF A MULTI-CRITERIA INDEX

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Background: The General Movements Assessment (GMA) is one of the most important tools for early diagnosis of neurodevelopmental disorders. It is a reliable, quick, and non-invasive assessment of spontaneous movements in newborns, ideal for use in the Neonatal Intensive Care Unit (NICU). Previous studies have identified a strong influence of postnatal clinical factors on the classification of general movements using the GMA in the NICU. However, this literature is still scarce in developing countries, limiting the use of the tool and, consequently, the early diagnosis and the monitoring of developmental changes.
Objectives: To develop a multicriteria index with the main clinical factors related to the occurrence of abnormal classification of general movements during the NICU stay; To verify the contribution of the index to explain the percentage of abnormal classifications of general movements and to identify babies at risk for developmental changes.
Methods: This is an exploratory cross-sectional study, with data from a prospective longitudinal study. Preterm newborns (PTNB) with less than 37 weeks of gestational age were included, according to admission to the NICU. Their spontaneous movements were classified as normal or abnormal through the GMA by 2 trained and certified evaluators. The babies' clinical variables were recorded on a data sheet. Data analysis was performed using the Multicriteria Decision Support, a method that allows the development of an index to identify risk factors related to the abnormal classification of the general movements of newborns.
Results: Fifty-two PTNB were evaluated, of which 30 (57.7%) were male, with a mean gestational age of 31.63 ($\pm$2.38) and mean birth weight of 1560.13 ($\pm$412.86). The mean total hospitalization time of the babies was 32.84 days, with the mean use of mechanical ventilation for 2.05 days; 45 (86.5%) used non-invasive ventilatory support and/or oxygen therapy. Grade I-II peri-intraventricular hemorrhage was identified in 24 (44.8%) babies and grade III in just two (3.8%); 4 (7.7%) PTNB had patent ductus arteriosus and 7 (13.5%) had postnatal infection. As for socioeconomic level, 44 (84.6%) families had an average income of less than 2 minimum wages. The multicriteria index was calculated from the equation: Multicriteria Index child i = Evaluation criterion 1 child i weight criterion 1 + ... + Evaluation criterion n child i weight criterion n. A significant positive linear association was found between the multicriteria index and the abnormal trajectories of general movements (R2=0.27; β=0.51; p$<$0.0001).
Conclusion: The developed multicriteria index was able to identify PTNB with a higher risk of developmental changes, given its positive relationship with the percentage of abnormal general movements.
Implications: The results of the present study reinforce the possibility of using GMA for the early detection of neurodevelopmental disorders in PTNB even during their stay in the NICU, helping with postnatal follow-up and early intervention, if necessary.
Keywords: General Movements, Preterm infants, Early diagnosis

Conflict of interest: The authors declare no conflict of interest.
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FUNCTIONALITY AND RESPIRATORY MUSCLE STRENGTH POST-COVID 19 IN A CARDIOPULMONARY REHABILITATION SERVICE OF THE UNITED HEALTH SYSTEM (SUS)

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Background: Infection with SARS-CoV-2 (coronavirus) led to the involvement and complications of different organs, which may lead to signs and symptoms that can last for months after infection, functionally compromising these individuals. Faced with this, the physiotherapist has a fundamental role.
Objective: Describe the Functional Status and Respiratory Muscle Strength of post-covid patients, referred to start an outpatient cardiopulmonary rehabilitation (CPR) program of the Unified Health System (SUS), with complaints of dyspnea and fatigue.
Methods: Individuals with medical referral for rehabilitation due to cardiorespiratory and/or musculoskeletal complications due to COVID-19 infection were included, regardless of gender and age, and regardless of the type of clinical treatment performed during the infection phase of the disease. As estimates, the pre-intervention was linked to a research and extension project in cardiopulmonary rehabilitation aimed at patients with post-covid complications. The assessment was structured and performed with the application of the following tests and tests: Post-COVID-19 Functional Status Scale (PCFS), Modified Medical Research Council, Degree of Dyspnea (MRC), Test 1-minute Sit-and Stand-Up Test (TST1), 2-minute Stationary Walking Test (SWT2), 6-minute Walk Test (6MWT) and Manovacuometry (MIP - Maximum Positive Inspiratory Pressure / MEP - Maximum Positive Expiratory Pressure).
Results: At this time, six (6) were evaluated, 4 males and 2 females, with a mean age of 52 years ($\pm$ 18). As results obtained are: PCFS: Grade 0 (1 person), grade 1 (2 people), grade 2 (2 people), grade 3 (1 person); MRC 1 ($\pm$ 1); TST1 17 repetitions $\pm$ 6, SWT2 53 lifts ($\pm$ 25), 6MWT 413 m ($\pm$ 112) with mean predicted value of 595; PiMax -82cmH2O ($\pm$ 31) with a mean predicted value of -100cmH2O; PeMax +83cmH2O ($\pm$ 31) with a predicted average of +104cmH2O.
Conclusion: For these patients, it was possible to observe PiMax and PeMax values below the predicted values, showing impairment of the respiratory muscles. In addition, a single individual did not present functional dysfunction, and the functional performance tests justified the lower-than-expected results.

Implications: Individuals with symptoms of dyspnea and fatigue after infection with COVID-19 have a functional and respiratory disability and should be referred to outpatient public services specialized in rehabilitation.
Keywords: COVID-19, Respiratory Muscle Strength, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Apoio Financeiro FAPESC — Fundação de Amparo à Pesquisa e Inovação do Estado de Santa Catarina
Ethics committee approval: Centro Universitário para o Desenvolvimento do Alto Vale do Itajaí: Process n. 93720218.6.0000.5676

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HEART FAILURE AND POST-COVID SYNDROME: A CASE REPORT ON THE EVOLUTION OF THE FUNCTIONAL STATUS AFTER A CARDIOPULMONARY REHABILITATION PROGRAM

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Background: Submaximal field walking tests are easy to apply and low cost, but it is necessary to standardize their application, especially in the pediatric population. The feasibility and its use in patients with congenital heart disease (CHD) have been studied.
Objectives: To verify the submaximal field walking tests applied in the cardiopulmonary evaluation of children and adolescents with CHD.
Methods: Literature systematic review, the search for scientific articles was carried out in the electronic databases Medical Literature Analysis and Retrievel System Online (MEDLINE via PubMed), Latin American and Caribbean Literature in Health Sciences (LILACS), Cochrane-Library, Physiotherapy Evidence Database (PEDro), Scientific Electronic Library Online (SciELO) and ScienceDirect, structured in PICO format, without date restrictions. For the search strategy, words from the Medical Subject Heading Terms (MeSH) dictionary were used with the following descriptors: [("Congenital Heart Defects" OR "Congenital Heart Defect" OR "Malformation of Heart" OR "Heart Abnormality" OR "Congenital Disorders" OR "Neonatal Diseases and Abnormalities" OR "Tetralogy of Fallot" OR "Tricuspid Atresia" OR "Ebstein Anomaly" OR "Ebstein's Malformation" OR "Birth Defects" OR "Congenital Abnormalities") AND ("Walk Test" OR "6 -min Walk Test" OR "6-minute Walk Test" OR "Six-minute Walk Test" OR "Endurance Shuttle Walk Test")], which were later adapted to the other bases that were used in this review. Looking for studies that used submaximal field walking tests in children and adolescents with congenital heart disease aged 5 to 18 years. Methodological quality, effectiveness and safety, and risk of bias were assessed.
Results: Five studies met the eligibility criteria with a sample of 160 individuals with CHD, and all used the six-minute walk test (https://www.physio-pedia.com/Six_Minute_Walk_Test_/_6_Minute_Walk_Test6MWT). Note that different methodologies and modifications are used. The only clinical trial showed good methodological quality. Four studies had a low risk of bias, and one study had a moderate risk.
Conclusion: In this review, the 6MWT proved to be the first-choice method for assessing exercise capacity in children and adolescents with CHD, however, the lack of standardization in the application of the test became evident, which made it difficult to compare the results.
Implications: Reducing the limitations and heterogeneity in the application of the test will enable more concrete outcomes and facilitate their reproduction in clinical practice.
Keywords: Pediatrics, Congenital Heart Disease, Field walking test

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not applicable.

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POST-COVID-19 SEQUELAE AND THE ASSOCIATION OF INSPIRATORY MUSCLE TRAINING IN A CARDIOPULMONARY REHABILITATION PROGRAM: A CASE REPORT

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Background: Post-COVID-19 symptoms are persistent, and their sequelae include fatigue, dyspnea, and decreased functional capacity. In this context, cardiopulmonary rehabilitation can improve the symptoms, functional capacity, and quality of life of these patients.
Objective: This paper reports the case of a woman with COVID-19 sequelae presenting frequent symptoms such as dyspnea and fatigue.
Methods/Case Description: Patient I.S, 56 years old, presenting dyspnea and post Sars-Cov-2 fatigue, scheduled for a cardiac rehabilitation program. The pre- and post-intervention assessment was based on the: Post-COVID-19 Functional Status Scale (PCFS), 1-minute Sit and Stand Test (SST1), 2-minute Stationary Gait Test (2MWT), Test of 6-minute walk (6MWT) and Manovacuometry. The progressive recovery program had the duration of 8 weeks, 2 times per week, based on: 1) Aerobic exercises on a treadmill; 2) respiratory kinesiotherapy; 3) Inspiratory Muscle Training with POWERbreathe® equipment, with progressive load; 4) Circuits and Stretches. The first session started with aerobic exercise for 15 minutes, at 5 km/h, without incline, in continuous use of POWERbreathe® in 2 cmH2O and respiratory kinesiotherapy exercises. The patient had a 100% adherence to the program. Sessions were based on 20 minutes of aerobic exercise at 5 km/h and rib cage stretching exercises with continuous POWERbreathe® at 4 cmH2O.
Results: The results obtained were: PCFS Grade 0 pre- and post-intervention, SST1 (24 repetitions vs 29 repetitions), 2MWT (87 lifts/Borg Final 3 vs 130 lifts/Borg Final 3), 6MWT (561 vs 630m) and Manovacuometer (-80cmH2O / +100cmH2O vs -100cmH2O/ +120cmH2O).
Conclusions: A cardiopulmonary rehabilitation program, associated with inspiratory muscle training and respiratory kinesiotherapy, for 8 weeks, was able to promote improvement in respiratory muscle strength and functional capacity after COVID-19.
Implications: A functional rehabilitation program for patients with post-COVID associated with inspiratory muscle training promotes care and respect for the singularities of each case, allowing an early return to activities of daily living.
Keywords: Inspiratory Muscles, COVID-19, Aerobic Exercise

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Centro Universitário para o Desenvolvimento do Alto Vale do Itajaí (UNIDAVI) process number 4.731.507.

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SUBMAXIMAL FIELD WALKING TESTS APPLIED IN THE CARDIOPULMONARY ASSESSMENT OF CHILDREN WITH CONGENITAL HEART DISEASE: A SYSTEMATIC REVIEW

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Background: Submaximal field walking tests are easy to apply and low cost, but it is necessary to standardize their application, especially in the pediatric population. The feasibility and its use in patients with congenital heart disease (CHD) have been studied.
Objectives: To verify the submaximal field walking tests applied in the cardiopulmonary evaluation of children and adolescents with CHD.
Methods: Literature systematic review, the search for scientific articles was carried out in the electronic databases Medical Literature Analysis and Retrievel System Online (MEDLINE via PubMed), Latin American and Caribbean Literature in Health Sciences (LILACS), Cochrane-Library, Physiotherapy Evidence Database (PEDro), Scientific Electronic Library Online (SciELO) and ScienceDirect, structured in PICO format, without date restrictions. For the search strategy, words from the Medical Subject Heading Terms (MeSH) dictionary were used with the following descriptors: [("Congenital Heart Defects" OR "Congenital Heart Defect" OR "Malformation of Heart" OR "Heart Abnormality" OR "Congenital Disorders" OR "Neonatal Diseases and Abnormalities" OR "Tetralogy of Fallot" OR "Tricuspid Atresia" OR "Ebstein Anomaly" OR "Ebstein's Malformation" OR "Birth Defects" OR "Congenital Abnormalities") AND ("Walk Test" OR "6 -min Walk Test" OR "6-minute Walk Test" OR "Six-minute Walk Test" OR "Endurance Shuttle Walk Test")], which were later adapted to the other bases that were used in this review. Looking for studies that used submaximal field walking tests in children and adolescents with congenital heart disease aged 5 to 18 years. Methodological quality, effectiveness and safety and risk of bias were assessed.
Results: Five studies met the eligibility criteria with a sample of 160 individuals with CHD, and all used the six-minute walk test (https://www.physio-pedia.com/Six_Minute_Walk_Test_/_6_Minute_Walk_Test6MWT). Note that different methodologies and modifications are used. The only clinical trial showed good methodological quality. Four studies had a low risk of bias, and one had a moderate risk.
Conclusion: In this review, the 6MWT proved to be the first-choice method for assessing exercise capacity in children and adolescents with CHD, however, the lack of standardization in the application of the test became evident, which made it difficult to compare the results.
Implications: Reducing the limitations and heterogeneity in the application of the test will enable more concrete outcomes and facilitate their reproduction in clinical practice.

Keywords: Pediatrics, Congenital Heart Disease, Field walking test

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SCREENING FOR FRAILTY, NUTRITION AND MUSCLE STRENGTH OF HOSPITALIZED ELDERLY

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Background: The increase in life expectancy in recent years has brought a scenario of multimorbidities and the presence of geriatric syndromes, such as frailty, making the elderly vulnerable to decompensation and hospitalizations. In addition, nutritional status and muscle strength have a significant association with frailty, so their characterization in the hospitalized elderly population is extremely relevant since such conditions are accompanied by adverse clinical outcomes, increasing the length of hospitalization and mortality. From this, it is possible to program multidisciplinary strategies and outline the best individualized intervention for these patients, aiming at an early discharge and higher quality of life.
Objectives: To evaluate the presence of frailty, nutritional status, and muscle strength of hospitalized elderly.
Methods: This is a prospective, observational, and cross-sectional study in which patients hospitalized in the ward of a University Hospital over 60 years of age were evaluated. Data were collected from medical records and characterization of the sample. Patients were assessed for frailty screening (Fried criteria), nutritional assessment through mini nutritional assessment (MAN) and handgrip strength.
Results: Partial data from 51 study participants were analyzed. Regarding frailty, according to Fried's criteria, 90.2% of the patients were classified as frail, 9.8% as pre-frail, and none as non-frail. The MAN scores reveal that, in relation to nutritional status, 19.6% are at risk of malnutrition and 43.13% are malnourished. Regarding muscle strength, 66.66% of men and 76.9% of women had muscle weakness, with the mean of men of 27.6 $\pm$11.43 (76.66% of predicted) and of women of 19.3 $\pm$5.76 (83.91% of predicted).
Conclusion: Hospitalized elderly are mostly fragile and have nutrition deficits and peripheral muscle weakness.
Implications: Faced with the presence of frailty, nutritional deficit, and muscle weakness, future intervention studies deserve attention to minimize damage to the independence and functionality of the elderly.
Keywords: Hospitalization, Elderly, Frailty

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Universidade Federal de São Carlos - UFSCar, 5.416.097.

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THE RELATIONSHIP OF FUNCTION, FLEXIBILITY, AND RIGIDITY OF THE HIP AND PERFORMANCE IN THE MODIFIED STAR EXCURSION BALANCE TEST

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Background: The Modified Star Excursion Balance Test (mSEBT) was developed as a dynamic postural control test, has been shown to be predictive of lower limb injuries and is consolidated as a valid and reliable measure. However, the relationship between hip variables and mSEBT performance has not been fully elucidated. Deficits in muscle function, flexibility, and range of motion (ROM) of passive medial rotation (MR) of the hip can compromise the performance of mSEBTs.
Objectives: To verify whether function, flexibility and passive ROM of hip MR predict mSEBT performance in athletes and practitioners of physical activity.
Methods: The database of the Physiotherapy Assessment Tool (PHAST) application was used to analyze the records of 125 patients. The relationship of the variables was verified, using multiple linear regression: function of hip extensors, gluteus medius and maximus, the flexibility of iliopsoas, rectus femoris and hamstrings, as well as passive ROM of medial rotation MR hip of the dominant limb with recordings of anterior, posteromedial, and lateral reach distance, as well as mSEBT composite score.
Results: The results revealed a statistically significant model for hip extensor function predicting mSEBT performance in 6% for the composite score ($F = 8.07$; $R = 0.24$; $R^2 = 0.062$; $p = 0.005$), in 7% for the posterolateral reach distance ($F = 9.18$; $R = 0.26$; $R^2 = 0.070$; $p = 0.003$), by 7% for the posteromedial reach ($F = 9.12$; $R = 0.26$; $R^2 = 0.069$; $p = 0.003$). The association of hip extensor function with gluteus medius function predicted mSEBT performance by 13% for posteromedial reach distance ($F = 9.40$; $R = 0.36$; $R^2 = 0.13$; $p = 0.000$). No other associations of hip variables were observed.
Conclusion: Hip extensor function has a statistically significant, but weak, association with mSEBT composite score performance and posterolateral and medial reaching distances. The hip extensor and gluteus medius functions had the highest percentage of prediction, still low, of mSEBT performance for the posteromedial reach.
Implications: These findings provide useful information for clinical practice on the contribution of hip musculature functions to mSEBT performance, injury prediction/prevention, and dynamic postural control in athletes and practitioners of physical activities.
Keywords: Dynamic postural control, Injuries, Test

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: The Human Research Ethics Committee of the Federal University of Vale do Jequitinhonha e Mucurí, Brazil approved the study. (CAAE: 42214920.4.30001.5149).

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PHYSICAL THERAPY ASSESSMENT AND INTERVENTION IN MOTORCYCLE ACCIDENTS IN PRIMARY CARE: A NARRATIVE REVIEW

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Background: Traffic accidents are an important problem for public health, due to their great impact on morbidity and mortality, with a predominance of motorcycle accidents. Brazil is ranked 5th among the countries with the highest number of traffic deaths and is also the second leading cause of death among all deaths from external causes. Motorcyclists are 14 times more susceptible to death. In view of the vulnerability of risk factors, it is important to consider the types of injuries and body areas most frequently affected due to motorcycle accidents, observing the magnitude of the trauma, such as traumatic brain injury (TBI) and spinal cord injury (TRM); fractures in the upper and lower limbs; various injuries, dislocations, sprains and abrasions, contusions, sprains/dislocations, and cuts/lacerations. The evaluation and treatment of the grievance directed to Primary Health Care in the rehabilitation of the patient with musculoskeletal and neurological impairment resulting from these accidents, lacks a physiotherapeutic evaluation with instruments that can contribute to the process of assessment and physiotherapeutic intervention. In the evaluation, anamnesis, physical examination, using measurement instruments for pain assessment, evaluation of attitudes and behavior and driving style, and the type and severity of injuries and possibility of survival of motorcyclists involved in traffic accidents are performed.
Objectives: The objective of this study was to conduct a Narrative Review on traffic accidents and to investigate the type of physical therapy evaluation with its respective intervention in Primary Care.
Methods: To this end, a literature review was conducted in the Scielo, Lilacs, and PUBMED databases, including combining terms and keywords using the Boolean operators OR and AND, with the following descriptors: Traffic Accidents, Physical Therapy, Primary Care.
Results: The results found showed a certain vulnerability in the rehabilitation of patients with musculoskeletal and neurological impairment resulting from these accidents, lacking an accurate physiotherapeutic evaluation, with validated instruments that can contribute to the process of evaluation and physiotherapeutic intervention.
Conclusion: The physiotherapist has been dedicating his attention, almost exclusively, to the prevention, cure, and rehabilitation of polytraumatized and/or sequelae patients, whose mission is to develop actions aimed at health maintenance or, in the last case, to the prevention of sequelae, and not only to rehabilitation, and in the scope of injury prevention and health promotion.
Implications: This study allows us to present suggestions for possible future research paths. Some of these suggestions are related to new studies on changes in conceptions, highlighting the importance of conducting Health Education actions for the population through lectures, making these motorcyclists aware of the dangerous relationship to risk factors and traffic accidents, performing group attendance for experience reports regarding the experience lived during the period of the accident, besides offering to these public pamphlets, booklets with orientations alerting about the conditioning factors of accident prevention and health education, offering subsidies for the adoption of new habits in education and health.
Keywords: Traffic Accidents, Physical Therapy, Primary Care

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INFLUENCE OF PHOTOBIOMODULATION ON CELL VIABILITY OF MULTIPOTENT MESENCHYMAL STEM CELLS FROM ADIPOSE TISSUE IN VITRO

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Background: The use of mesenchymal stem cells (MSCs) has been an alternative to conventional therapeutic modalities for wound healing, with recent advances in cellular and molecular biology to aid in tissue repair. The use of photobiomodulation (FBM) is used in the healing process by modulating cell metabolism through photochemical action, but many parameters and inappropriate use can disrupt this process, and there is no standardization for the application of the LASER to assist in the healing process.
Objective: to investigate the effect of different energies of LASER photobiomodulation on mesenchymal stem cells, which play a key role in the healing process.
Methods: Mesenchymal stem cells were cultured in αMEM medium with 10% FBS (Fetal bovine serum), penicillin, and streptomycin. Cells were incubated at 37 °C in an 80% humidified atmosphere containing 5% CO^2 in the dark, until reaching 90% confluence. The 3 groups with a wavelength of 830 nm were submitted to LASER applications: G1: 0.5 J, G2: 2 J and G3: 4 J, with irradiation at 24 and 48 hours. The cells were stained with markers for viable cells (Hoechst) and dead cells (Propidium Iodide. The analysis of the plates with MSCs was performed with the MetaXpress® software at 48 and 72 hours, and the statistical analyses were performed with the software GraphPad Prism® 7.0.
Results: The results obtained in the experiments showed that irradiation with the 830 nm wavelength laser showed an increase in cell viability at 48 and 72 hours compared to the control group and showed a significant difference when using 2 J energy.
Conclusion: Photobiomodulation assists in increasing cell viability when using the correct parameters, capable of assisting in the process of tissue regeneration.
Implication: The use of appropriate parameters influences the cellular response and consequently the effectiveness of the treatment.
Keywords: Low-level laser therapy, Cell survival, Tissue healing

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RESPIRATORY MUSCLE TRAINING IN PEOPLE WITH COPD: A SYSTEMATIZED REVIEW

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Background: Chronic obstructive pulmonary disease (COPD) is characterized by progressive airflow obstruction and lung hyperinflation due to loss of elastic recoil and air trapping. These changes are related to an altered pattern of ventilatory muscle recruitment. Respiratory muscle training aims to alter respiratory muscle recruitment to reduce dyspnea, hyperinflation, improve respiratory muscle performance, and optimize thoracoabdominal movement.
Objectives: To analyze the effect of respiratory muscle training in people with Chronic Obstructive Pulmonary Disease at different stages.
Methods: This is a systematized integrative literature review, carried out in the PubMed, SciELO and Physiotherapy Evidence Database (PEDro) databases, using the following search strategy: "breathing exercises" AND "maximal respiratory pressures" AND "chronic obstructive pulmonary disease". Searches were carried out limited to the years 2019 to 2023. The inclusion criteria were randomized controlled clinical trials, carried out in humans, in Portuguese and/or English, available in full and related to the proposed topic. The selection of studies was performed by two reviewers simultaneously and independently. The research was conducted following four stages: 1) reading of titles and abstracts; 2) analysis of duplicates; 3) reading the articles in full and 4) extracting the main information. The risk of bias in clinical trials was assessed using the Cochrane Risk of Bias Tool and the quality of evidence using the Grading of Recommendations Assessment, Development and Evaluation (GRADE).
Results: After searching the databases, 880 articles were found. Of these, 7 articles were selected to compose the present review because they met the objective and determined criteria. The respiratory muscle training protocols consisted of fast and deep breathing training with Voldyne, inspiratory and expiratory muscle training with Threshold, pursed lip breathing, respiratory muscle training with Powerbreathe, deep breathing and blowing straw in a glass of water. A total of 472 individuals, with mild to severe COPD, were analyzed. Intervention duration and weekly frequency ranged from 1 to 18 months, 3 to 7 days a week, respectively. All studies show that respiratory muscle training improved symptoms of dyspnea and fatigue, increased muscle strength, FEV1, FVC, functional capacity and improved quality of life ($p<0.05$). About risk of bias, studies ranged from low to moderate and the quality of evidence ranged from moderate to very low.
Conclusion: It was observed that respiratory muscle training significantly contributed to improving symptoms of shortness of breath, fatigue and increased muscle strength, quality of life and functional capacity.
Implications: Respiratory muscle training seems to be a good treatment for patients in different stages of COPD and at any level of care, whether at home, outpatient, or hospital, in addition to improving the symptoms of the disease and the patient's quality of life.
Keywords: Chronic obstructive pulmonary disease, Breathing exercises, Physical Therapy Modalities

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THE MOTOR BEHAVIOR OF PRETERM *VS* FULL-TERM INFANTS TO EARLY IDENTIFY RISK FOR NEUROMOTOR DISORDERS – CROSS-SECTIONAL STUDY

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Background: Prematurity has a high incidence in Brazil and worldwide. It is an important risk factor for neuromotor disorders, such as cerebral palsy. Early detection may be performed by the assessment of *General Movements* (GMs) and the *Infant Motor Profile* (IMP), which have adequate psychometric properties. Early detection is essential to refer infants to early intervention as soon as possible so they may take advantage of their sensitive development period.
Objective: To compare the motor behavior of preterm *vs* full-term infants at 4 months of age to identify risks for neuromotor disorders early.
Methods: At 4 months of age, 5 preterm infants with corrected age (35.6 ± 1.0 weeks of gestational age [GA]) were evaluated, exposed group (EG); and 5 term infants (39.5 ± 0.8 weeks GA), comparison group (CG). The dependent variable was motor behavior, measured by the Assessment of the quality of GMs, Hadders-Algra classification, and the IMP. The assessment of GMs classifies motor behavior into normal optimal, normal suboptimal, moderately abnormal, and abnormal categories, according to the complexity, variation, and fluency of the GMs. The IMP evaluates variation, adaptability, fluency, symmetry, and performance. Assessments were scored independently by two physiotherapists who were blinded to the groups and had adequate inter- and intra-reliability. Descriptive analysis and comparison tests between groups were applied (independent samples *t-test or Mann-Whitney test*), significance level < 0.05, by the SPSS.
Results: The EG had significantly the lowest GA (p-value$<$0.00; Cohen's r=0.90), weight (p-value=0.05; Cohen's r=0.57), and head circumference at birth (p- p-value=0.05; Cohen's r=0.58). The EG showed significantly less motor behavior variation in the IMP (p-value=0.01; Cohen's r=0.58) in comparison with CG. The infants did not present a significant difference regarding the classifications of the GMs. However, it was observed that only one infant from the EG presented the definitely abnormal category, at 4 months of age.
Conclusion: Premature infants showed less variation in motor behavior. Drawing attention to preterm infants is needed, as the atypical variation may indicate a high risk for neuromotor disorders. All infants evaluated in the present study were born during social isolation, a strategy to contain the pandemic caused by COVID-19. This fact may reflect the lack of significant difference between the groups in the evaluation of the GMs and in domains of IMP, i.e., adaptability, fluency, symmetry, performance, and IMP total score. Thus, the importance of monitoring the development of infants with predictive tools for early detection is highlighted.
Implications: Deficits in motor behavior domains during the first months of life may be indicative of risks for neuromotor disorders. It may be used as a parameter to indicate alterations in the structures and functions of infants at risk. Infants in the first months of life must be evaluated and monitored since early detection is fundamental to individualized early intervention diagnosis, prematurity; child development.
Keywords: Infants, Neuromotor, Physical Therapy

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IMPACT OF FIBROMYALGIA ON PHYSICAL ACTIVITY LEVEL AND HEALTH PERCEPTION IN WOMEN

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Background: Fibromyalgia is a disease characterized by diffuse and chronic musculoskeletal pain, which negatively affects multiple functional activities. There is evidence that women with fibromyalgia remain most of their waking time under sedentary behavior and reduced motor activity. Monitoring these variables in people with fibromyalgia becomes relevant because physical activity level and sitting time can be associated with perceived health.
Objectives: To assess the physical activity level, sitting time, and health perception in adult women with and without fibromyalgia.
Methods: The casuistry consisted of women aged between 18 and 50 years old with a diagnosis of fibromyalgia (fibromyalgia group, FG, n=22) or without fibromyalgia or another painful fibromyalgia condition (control group, CG, n=19). The short version of the International Physical, Activity Questionnaire (IPAQ) was used to assess physical activity level, sitting time and health perception. Statistical analysis: Student's *t-test or Mann-Whitney test, Chi-square test or Fisher's exact test, a* significance level of 5%.
Results: The groups were homogeneous regarding age (FG, 37.5± 7.6; CG, 34.5±6.6 years, p=0.182). There was no difference between groups for sitting time (FG, 438±196; CG, 322±208 min/day; p=0.074); the total energy expenditure with physical activity practice per week was greater in FG than in CG (FG, 1429±1491; CG, 2010 ±3431 MET-minutes/week; p=0.036). In the FG group, there was a predominance of participants with a moderate level of physical activity (45.5%, n=10), while in the CG the highest proportion was of a high level of physical activity (56.2%, n=10), but there was no significant difference for these proportions (p=0.177). Furthermore, in FG (59.1%, n=13), the proportion of participants who reported poor-fair health perception was higher than in CG (5.3%; p$<$0.001).
Conclusion: Adult women with fibromyalgia have lower energy expenditure related to the physical activity practice and worse health perception than women without fibromyalgia.
Implications: The results may contribute to developing strategies to encourage regular physical activity, reducing the adverse health effects associated with a sedentary lifestyle in people with fibromyalgia.
Keywords: Sedentary Behavior, Exercise, Fibromyalgia

Conflict of interest: The authors declare no conflict of interest.

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LEVEL OF PHYSICAL ACTIVITY OF HYPERTENSIVE ELDERLY PEOPLE AT TWO BASIC HEALTH UNITS IN MARINGÁ-PR

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Background: Physical activity is a crucial factor in maintaining health and well-being in the elderly. Hypertension is a chronic condition that affects a considerable proportion of individuals in this population, and physical activity has been recognized as a fundamental component of disease management, as it helps to reduce blood pressure and improve cardiovascular health.
Objectives: To investigate the level of physical activity in hypertensive elderly people who attend two Basic Health Units in Maringá-PR.
Methods: This research was a quantitative, cross-sectional, exploratory study, which included elderly men and women. Data were collected in 2 Basic Health Units (UBS) between March and July 2019. Sociodemographic information and physical activity level were evaluated using the short version of the International Physical Activity Questionnaire (IPAQ), which estimates the time spent by week, in different dimensions of physical activity and inactivity. Participants with disabling neurological diseases or comprehension difficulties were excluded from the study. The significance level adopted in the tests was 5%.
Results: The 200 respondents had a mean age of 71.2±7.8 years (minimum 60 and maximum 102 years), 98 (49.0%) were female, 127 (63.5%) were white, 84 (42.0%) were between 60 and 69 years old, 112 (56.0%) were married, 171 (85.5%) reported having children. Almost all individuals (195 or 97.5%) used antihypertensive drugs continuously, with 108 (54%) being overweight and obese and, in the IPAQ classification, 153 (82.5%) were classified as irregularly active or sedentary. When correlating the IPAQ with the sociodemographic characteristics, a significant association was observed, where individuals with a lower age group ($p<0.05$), with a higher income (p=0.01), and married (p=0 .02), showed a higher level of physical activity and a better health-related condition. Despite practicing physical activity, hypertensive individuals did not meet the recommendations of the World Health Organization regarding the frequency and duration of physical activity.
Conclusion: Most hypertensive elderly had a low level of physical activity and were classified as irregularly active or sedentary. It was also observed that changes in lifestyle and lack of education influenced the non-adherence of these individuals to non-drug treatment and the usual practice of physical activity, which was the greatest difficulty observed in the study.
Implications: Health education and promotion strategies should be carried out to increase the level of physical activity and improve adherence to non-pharmacological treatment in this population, aiming to reduce the costs of health services that systemic arterial hypertension causes.
Keywords: Hypertension, Physical exercise, Aging

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MATERNAL SATISFACTION ASSESSMENT IN A NEONATAL INTENSIVE CARE UNIT

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Background: The satisfaction survey contributes to the knowledge about the positive and negative points of each service to have subsidies to favor a more appropriate environment and a better structuring of public policies focused on the health field. Especially in the Neonatal Intensive Care Unit (NICU), parental satisfaction is an essential parameter to assess the quality of service, with the ability to provide improvement in health care, as one of the main indicators of quality of care.
Objectives: This study sought to assess maternal satisfaction regarding the care provided by the multiprofessional team at a NICU.
Methods: This is a field research, quantitative approach, with 50 mothers who had children admitted to the NICU of the Maternidade de Alta Complexidade do Maranhão (MACMA). The instrument used was the questionnaire Empowerment of Parents in the Intensive Care-Neonatology (EMPATHIC-N), which assesses the satisfaction of parents of newborns admitted to the NICU, covering six evaluative domains: information; care and treatment; organization; participation of the mother; professional attitude and overall experience, in addition to two questions on overall satisfaction. The analysis occurred through Excel 2016, performing the average of the domains and overall satisfaction.
Results: When comparing the domains, the means indicated differences ranging from 5.23 - 5.64, with the minimum corresponding to the information domain and the maximum in global experience. The best-evaluated domains were global experience (5.64), care and treatment (5.44), and organization (5.52). Other domains, such as mother's participation (5.29), professional attitude (5.26,) and information (5.23), had lower averages. In overall satisfaction, the medical team was better evaluated (9.08) than the nursing team (8.76).
Conclusion: Mothers showed high levels of satisfaction regarding the care provided by the multiprofessional team, with averages close to six, especially in global experience, organization, and care and treatment, however, in the domains of information, professional attitude and participation of the mother showed the lowest averages, and the medical team was better evaluated in overall satisfaction. Moreover, the need for instruments that include all the professionals of the multiprofessional team is noted studies on the subject necessary and the development of a more comprehensive instrument is noted.
Implications: The research has proved to be of great relevance since it provides a better understanding of the knowledge regarding humanized practices within a NICU, contributing to effective and quality care.
Keywords: Patient Satisfaction, Patient Care Team, Neonatal Intensive Care Unit

Conflict of interest: The authors declare no conflict of interest.
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EFFECTS OF NINTENDO WII® TRAINING AND ECCENTRIC EXERCISES ON TREMOR IN PATIENTS WITH PARKINSON'S DISEASE: PRELIMINARY RESULTS

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Background: Parkinson's disease (PD) is a neurodegenerative disease, chronic and progressive, that produces signs such as tremors at rest, alteration in the functionality of upper limbs (MMSS), and cognitive decline, which impact the performance of activities of daily life. Eccentric exercises have been shown to reduce tremors in people with PD. Nintendo Wii exergames have been used in the rehabilitation of people with PD, promoting improvement in gait, balance, and cognition.
Objectives: To evaluate the effects of training using Nintendo Wii games in combination with exercises in the upper limb on tremors, upper limb functionality, and the cognition of patients with Parkinson's Disease (PD), compared to training exclusively composed of eccentric upper limb exercises.
Methods: This is a randomized, controlled, blinded clinical trial with a sample of 30 people with PD randomly allocated into two groups: Nintendo Wii group combined with eccentric exercises (n=15), who will do 20 minutes of eccentric exercises and 25 minutes of training with Nintendo Wii, and Exclusive eccentric exercises group (n=15), which will do only eccentric exercises for 45 minutes. Both groups will be trained for 8 consecutive weeks, twice a week, totaling 16 sessions. The groups will be evaluated before training, within 7 and 30 days after the end of training.
Results: It was verified in both groups: increase in handgrip strength tends; tremor reduction; improvement of the functional performance of the upper limbs; and improvement in cognitive performance.
Implications: The results of this study may contribute to a better understanding of the effectiveness of treatments focused on reducing tremor in patients diagnosed with Parkinson's disease.
Keywords: Parkinson Disease, Virtual Reality, Tremor

Conflict of interest: The authors declare no conflict of interest.
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HOW FIBROMYALGIA TREATMENT AND DIAGNOSIS ARE PERFORMED IN THE CITY OF SÃO CARLOS: A CROSS-SECTIONAL STUDY

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Background: Fibromyalgia (FM) is a chronic widespread pain disorder. Its prevalence varies between 0.2 and 6.6% in the world, with a higher prevalence in females. The diagnosis and treatment of FM can be carried out in primary health care (PHC) and although it can be diagnosed and treated in this context, the literature lacks articles that demonstrate that the diagnosis and treatment of FM occurs in the PHC. This is because it is common for PHC professionals to refer the patient to a specialist, making the diagnosis and treatment processes time-consuming and significantly affecting the lives of patients due to the length of this wait.
Objectives: To collect data on how the diagnosis and treatment of fibromyalgia is carried out in primary care in the city of São Carlos and what the different professionals do when screening and treating a patient with suspected fibromyalgia.
Methods: A cross-sectional study was carried out, and health professionals from Basic Health Units (BHUs) and Family Health Units (FHUs) distributed within the municipality of São Carlos were invited to answer an online form that evaluated which guidelines are followed by them and what is the conduct performed when they assist a patient with suspected FM.
Results: The study included 22 health professionals from the municipality, who have been working in PHC for an average of 9 years. Regarding the diagnosis of FM, 40% of professionals reported considering the presence of tender points to perform it, criteria of the American College of Rheumatology (ACR) of 1990, which are no longer considered an effective way to diagnose FM. In addition, only 5 professionals reported using the most current FM diagnostic criteria (2016 ACR revision). Regarding treatment, health professionals bring physical exercises as part of their conduct. However, it is noteworthy that one physiotherapist reported not performing non-pharmacological treatment; in addition, 4 professionals reported prescribing or referring their patients to integrative practices, and, in this sense, it is important to point out that there was no consensus by the Brazilian Society of Rheumatology for the use of these practices. Thus, it is notable that health professionals working in PHC in São Carlos do not know the current guidelines for diagnosing and treating FM, which may lead to excess referrals to secondary care and delays in patient care.
Conclusion: It is necessary to carry out interventions and training with health professionals who work in PHC for a better diagnosis and management of fibromyalgia.
Implications: This was the first study to understand how the diagnosis and treatment of fibromyalgia is carried out in the PHC and the first to raise aspects that may influence the diagnosis and treatment carried out in the BHUs and FHUs.
Keywords: Fibromyalgia, Treatment and Diagnosis, Primary Health Care

Conflict of interest: The authors declare no conflict of interest.
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DO THE INSTRUMENTS USED TO ASSESS FIBROMYALGIA SYMPTOMS GENERATE SIMILAR SCORES IN OTHER CHRONIC MUSCULOSKELETAL PAIN?

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Background: As with fibromyalgia, several musculoskeletal disorders are characterized by chronic pain, raising a clinical question – do the instruments used to assess fibromyalgia symptoms according to ACR criteria (ACR criteria) generate similar scores in other chronic musculoskeletal pain?
Objectives: To compare the pain, functionality, and symptoms between fibromyalgia and other chronic musculoskeletal pain using the Widespread Pain Index (WPI) and the Symptom Severity Scale (SSS).
Methods: This is a cross-sectional study. Participants over 18 years old were included if they presented the report of chronic musculoskeletal pain ($\geq$ 3 months), and after that, they were divided into two groups (fibromyalgia and chronic pain). They answered the Fibromyalgia Impact Questionnaire-Revised (FIQ-R), Brief Pain Inventory (BPI), Numerical Pain Rating Scale (NPRS) for pain and fatigue, WPI, and SSS.
Results: A total of 166 participants were included in this study into two independent groups (chronic pain, n=83; fibromyalgia, n=83). We observed significant differences ($p < 0.05$) and large effect sizes (Cohen's d, ≥ 0.7) in clinical outcomes comparisons between groups (i.e., widespread pain, symptom severity, present pain at rest, and after movement, fatigue; pain severity, and impact; function, global impact, and fibromyalgia symptoms).
Conclusion: Fibromyalgia patients (2016 ACR criteria) compared to other chronic musculoskeletal pain patients have higher levels of pain (at rest or after movement) and fatigue, greater impairment in both functionality and global impact, and worse symptoms.
Implications: WPI and SSS instruments should be used exclusively to assess fibromyalgia symptoms.
Keywords: Chronic Pain, Rheumatology, Primary Health Care

Conflict of interest: The authors declare no conflict of interest.
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A BIOMECHANICAL ANALYSIS OF TURNING DURING GAIT IN INDIVIDUALS WITH PARKINSON'S DISEASE

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Background: Turning during gait is a complex component of locomotor capacity and can prove challenging to individuals with neurodegenerative diseases during their day-to-day lives. In Parkinson's disease (PD), motor dysfunction can be exacerbated in conditions that require interruptions in gait or change in direction. These changes in gait are among the leading factors contributing to falls and can occur at different stages and in different clinical subtypes of the disease, compromising functionality and, consequently, social participation.
Objectives: To describe and compare biomechanical variables during the task of turning while walking in individuals with Parkinson's disease and its different clinical subtypes.
Methods: A cross-sectional study approved composed of 43 individuals with idiopathic Parkinson's disease, divided into groups according to their clinical subtype: akineto-rigid, tremor-dominant, and mixed. Motor impairment was evaluated using the Unified Parkinson's Disease Rating Scale, and the cognitive status of individuals was assessed using the Mini-Mental State Examination. The biomechanical parameters of gait (number of steps, step length, cadence, as well as variables associated with the displacement of the center of mass, such as amplitude, velocity, and turning radius) were analyzed while turning during gait, in a kinematics laboratory. Statistical analysis included a comparison between Parkinson's disease subtypes (one-way ANOVA and Kruskal-Wallis) and a correlation between biomechanical parameters (Pearson and Spearman), with the significance set at 5%.
Results: There were no statistically significant differences in the comparison between akineto-rigid, tremor-dominant, and the mixed subtypes. The correlation analysis highlighted a significant correlation between the anticipatory step length and the number of steps ($r = -0.418$; $p = 0.005$), step length while turning ($r = 0.805$; $p < 0.001$), step length after turning ($r = 0.644$; $p < 0.001$), the mean velocity ($r = 0.830$; $p < 0.001$), the mean velocity while turning ($r = 0.755$; $p < 0.001$), and the maximum velocity ($rho = 0.835$; $p < 0.001$).
Conclusion: In people with Parkinson's disease, the greater the length of the anticipatory step, the greater the step length required to turn and the greater the step length taken after turning. In addition, the greater the speed, the greater the step length amplitude, and the greater the radius of the turn, resulting in fewer steps in order to complete the task.
Implications: This research demonstrates that individuals with Parkinson's disease face difficulties when turning during gait. The results suggest that these difficulties primarily occur during the anticipatory phase of the turn, which affects the entire task. Therefore, these findings can potentially be used to guide rehabilitation interventions in individuals with Parkinson's disease, such as targeting the anticipatory phase of turning through gait training, visual and auditory cues, rhythmic cues, verbal cues, environmental enrichment, and progressive activities with increasing complexity. These interventions are likely to be beneficial in improving turning and gait performance in the day-to-day lives of individuals with Parkinson's disease.
Keywords: Parkinson's disease, Gait, Kinematics

Conflict of interest: The authors declare no conflict of interest.
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DEPRESSION, DEPRESSIVE SYMPTOMS AND USE OF ANTIDEPRESSANTS IN HEALTH PROFESSIONALS DURING THE COVID-19 PANDEMIC - CROSS-SECTIONAL STUDY

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Background: Depression is a health problem that affects the whole of society, having worsened in the context of the Covid-19 pandemic. There is evidence that healthcare workers are more likely to develop depression, which can compromise productivity at work and quality of life.

Objectives: To describe the prevalence of depression, depressive symptoms, and use of antidepressant medications in healthcare workers during the COVID-19 pandemic.
Methods: 125 healthcare workers from different occupations who are part of the HEROES cohort were evaluated. Diagnosis of depression and use of antidepressant medication were obtained by self-report. Depression symptoms were assessed using the Beck Depression Inventory (BDI), consisting of 21 items that include symptoms and attitudes. Age, sex, and occupation were extracted from the sociodemographic questionnaire. Data analysis was performed descriptively and using the Chi-square test in the SPSS program with a significance level of 5%.
Results: The sample consisted of women (83%) and hospital workers (49%). About 45% had symptoms of depression on the BDI; 18% use antidepressant medication and 6% reported a medical diagnosis of depression. Among the symptoms of depression, the most prevalent were fatigue (80%), insomnia (68%) and dissatisfaction (66%). The least prevalent symptoms were weight loss (4%), suicidal ideation (9%) and punishment (19%). There was an association between medical diagnosis and the use of medication for depression ($P<0.01$). There was no association between depression symptoms and medical diagnosis ($P=0.19$) and medication use ($P=0.21$).
Conclusion: Many healthcare workers reported depressive symptoms and use of antidepressant medication; however, the proportion of workers with a medical diagnosis was much lower.
Implications: The BDI was sensitive to identifying depressive symptoms and can be used for screening and designing preventive actions. Many healthcare workers use antidepressant medications without a medical diagnosis. Thus, additional investigations are necessary to understand this finding.
Keywords: Health Promotion, Disease Prevention, Occupational Health

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: São Paulo Research Foundation (FAPESP Proc N 2020/10098-1); National Council for Scientific and Technological Development (CNPq).
Ethics committee approval: Research Ethics Committee of the Federal University of São Carlos, Brazil (certificate number: 39705320.9.0000.5504)

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PREVALENCE OF FALLS IN THE OLDER ADULT: AN INTRINSIC FACTOR OF DIABETES AND ARTERIAL HYPERTENSION

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Background: Falls are the most common cause of injuries in the elderly and have a higher prevalence with advancing age in addition to intrinsic factors such as female gender and comorbidities, extrinsic and behavioral. However, there is a need to understand how much some factors can potentiate these falls.
Objectives: To verify the influence of intrinsic risk factors such as diabetes and high blood pressure on falls in elderly Brazilians.
Methods: A cohort study with retrospective and prospective analysis using an online questionnaire and one of the arms of a larger study. Individuals aged 60 years or over, of both sexes, who had access to the online questionnaire and agreed to participate in the research, by signing "yes" in the digital Free and Informed Consent Form (ICF) were included. Duplicates in the answers to the online questionnaire were excluded, as well as questions that were not related to intrinsic factors. The elderly were invited through communication applications, social networks, and by e-mail to people known to the researchers, and a link was sent to answer the questionnaire, which took 30 minutes to complete. A Shapiro-Wilk distribution test was performed, which found that the data had a normal distribution. Thus, median, and interquartile ranges were used for continuous variables, and frequency (number and percentage) for nominal variables. The chi-square test was performed to analyze the association between comorbidities (hypertension and diabetes) and falls, using the JASP software, adopting a significance level of $p<0.05$.
Results: A total of 402 elderly participants in the research with an average age of (69.7 ± 9.8) were collected, 71.15% female and 28.85% male. Related to intrinsic factors, 20.4% reported having diabetes, with 41.5% having fallen in the last 12 months, and 13.4% having fallen due to dizziness, with a prevalence of falls in the afternoon. As for arterial hypertension, we had a sample of 42.8% of the elderly, with 41.8% falling in the last year, and 7.5% falling due to dizziness, with the highest rate of falls occurring in the afternoon. When we relate diabetes and hypertension, we had a sample of 14.9%: 46.7% had a fall in the last 12 months, and 11.7% fell due to dizziness, with a prevalence of falls in the afternoon.
Conclusion: According to the results, diabetes and hypertension had the greatest significance when related only to falls. Regarding the symptoms dizziness was not significant between diabetes and hypertension. The afternoon period was found for the occurrence of falls.
Implications: With the results of this study, we can better identify where the greatest risk of falls is for the elderly, improving guidance and increasing the conditions to prevent and try to inhibit these falls as much as possible.
Keywords: Falls, Arterial hypertension, Diabetes

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Research Ethics Committee of the Faculty of Medicine of the University of São Paulo (4.488.029). 4.488.029

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STUDY PROTOCOL: EVALUATING THE EFFECTIVENESS OF CEREBELLO-SPINAL STIMULATION IN INDIVIDUALS WITH ACS

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Background: Spinocerebellar ataxias (SCA) comprise a set of progressive degenerative diseases, still without available pharmacological treatment, that cause gait and balance disorders. Two recent clinical trials demonstrated that the use of transcranial direct current stimulation (tDCS) cerebellar spinal cord improved performance on tests of upper limb coordination, severity of ataxia and gait (2 weeks of stimulation), and motor scores (including balance), cognitive and quality of life scores (4 non-consecutive weeks) in subjects with degenerative ataxias, including ACS.

Objectives: The primary aim of this study is to evaluate how many sessions of cerebellar spinal tDCS associated with a gait training protocol a sample of individuals with ACS should receive until they stop showing improvements in the time, they can remain standing on one limb bottom. The impact of this intervention on measures of balance and gait performance will also be evaluated.
Methods: This is a pragmatic clinical trial protocol, in which 20 patients with different types of ACS will receive tDCS sessions associated with a gait training protocol with progressively greater difficulty. The tDCS will be applied for 20 min and intensity of 2mA, with the anode electrode positioned on the cerebellar region and the cathode on the thoracic region of the medulla (approximately T8). At each session, the time individuals manage to remain in unipodal support will be computed (less than three attempts). When the time in unipodal support is like that of age- and sex-matched healthy individuals, the protocol will be discontinued. Patients will also be evaluated before and after the end of the intervention using the Scale for the Assessment and Rating of Ataxia (SARA), dynamDynamic Gait Index (DGI), Minibest.
Results: It is expected that multiple sessions of cerebellar-spinal tDCS associated with gait training promote an increase in the time that each participant is able to remain standing on one leg independently, resulting in a more stable gait and better balance.
Conclusion: The study is under development. The project will be defended this semester and after approval by the institution's research ethics committee, the volunteer recruitment phase will begin.
Implications: This study will help physiotherapists who use tDCS in patients with SCA3 in choosing the number of sessions that should be used to obtain satisfactory results regarding balance and gait in this population.
Keywords: tDCS, Spinocerebellar ataxia, Balance

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Acknowledgment: Not applicable.

Ethics committee approval: Not applicable.

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BLADDER TRAINING IN THE IMPROVEMENT OF OVERACTIVE BLADDER SYMPTOMS: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

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Background: Bladder training (BT) is characterized by a programmed voiding regimen with gradually adjusted voiding intervals and is commonly used in the conservative treatment of individuals with overactive bladder (OAB).
Objectives: To investigate and update the literature on the effectiveness of BT treatment alone and/or combined with other therapeutic strategies that can promote improvement in OAB symptoms and quality of life and report adverse events.
Methods: The systematic review was performed in eight databases, including PubMed, PEDro, SciELO, LILACS, Cochrane Library, Web of Science, EMBASE and CINAHL. After selecting the titles, abstracts and full texts retrieved. To assess the risk of bias of the studies, the Cochrane RoB 2 tool and the GRADE system were used to determine all the evidence of the studies analyzed. The protocol of this study is available in the PROSPERO systematic review protocol registry database with the registration number (PROSPERO CRD42022301522).
Results: The search generated a total of fourteen randomized controlled trials (RCTs) included in the review. The total participants were 2,319 (men and women) from 9 countries. The minimum age of the sample was 18 and the maximum age was 80 years. RCTs featured BT isolated (n=12), BT + intravaginal electrical stimulation (IVES) (n=2), BT + DT (drug treatment) (n=5), DT (n=7), BT + Biofeedback (BF) + IVES (n=1), PFMT + BF (n=1), BT + PFMT + behavioral education/therapy (n=2), BT + PTNS (percutaneous tibial nerve stimulation) or BT + TTNS (transcutaneous tibial nerve stimulation) (n=1). To the meta-analyses BT combined with IVES in the short-term follow-up period promoted improvement in nocturia (DM: 0.89, 95% CI: 0.59-1.20), urinary incontinence (DM: 1.93, 95% CI:1.32-2.55) and quality of life (DM: 4.87, 95% CI: 2.24-7.50). Three RCTs were considered with a "High" risk of bias, nine studies with "Some concerns," and two with a "Low" risk. In the GRADE system, the RCTs showed very low, of evidence to the GRADE system.
Conclusion: BT combined with IVES showed favorable results for treating OAB in the short-term follow-up period. Thus, the use usingined with IVES is recommended for treating individuals with OAB.
Implications: For individuals with OAB treated with BT + IVES there is a report of reduced episodes of nocturia, urinary incontinence and improved quality of life in the short-term follow-up period. The methodological quality of the studies was the best possible for the moment; aspects of the currently available RCTs were analyzed to update the current literature. Most of the data in this review comes from moderate-sized RCTs of very low to moderate methodological quality, verified by GRADE, in addition to heterogeneous risk of bias across RCTs. The findings corroborate the recommendations of the societies guiding conservative treatment for OAB. BT should be offered in combination with IVES as supplemental therapy in conservative treatment to increase treatment efficacy in the short-term follow-up period.
Keywords: Bladder training, Rehabilitation, Overactive bladder

Conflict of interest: The authors declare no conflict of interest.

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AUTOMATIC ROTATIONAL THERAPY IN MECHANICALLY VENTILATED INDIVIDUALS AND LONG STAY IN AN INTENSIVE CARE UNIT: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Invasive ventilatory support and prolonged immobility in bed are predictive factors for the development of respiratory and musculoskeletal complications in critically ill patients, favoring

increased length of hospital stay, morbidity and mortality, and costs associated with long hospital stays.
Objectives: To evaluate the impact of automatic rotational therapy on length of stay in the intensive care unit (ICU) in mechanically ventilated patients.
Methods: Systematic review conducted from December to January 2023 with randomized clinical trials, following criteria reported in PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) registered in PROSPERO (CRD42022384258). The search strategy was built based on health sciences descriptors (DeCS), Medical Subject Headings (MeSH), keywords and synonyms most found in the literature. The search was carried out in seven databases: MEDLINE/PubMed, EMBASE, Scopus, Science Direct, Cochrane Library, CINAHL, and Web of Science. The eligibility criteria involved studies that evaluated automatic rotational therapy compared with changing the manual decubitus position during the length of stay in the ICU in individuals of both genders aged 18 years or older using invasive mechanical ventilation for a period. greater than 24 hours. There was no restriction on language or year of publication. The risk of bias was assessed using the Cochrane collaboration tool.
Results: 118 articles were identified, after excluding duplicates and reading in full, 9 were eligible, involving 679 participants. The number of individuals evaluated per article ranged from 27 to 124 in the control and intervention groups. For meta-analysis, four studies were included, totaling 323 participants. The standardized mean (SMD) difference was -0.03 days (95% CI -0.40, 0.35, p=0.90) between automatic rotational therapy and conventional recumbency, with no significant difference between groups with high evidence of overall heterogeneity (χ2 8.26, p= 0.04, I2 = 64%).
Conclusion: Automatic rotational therapy did not have a significant impact on the length of stay in the ICU in mechanically ventilated critical patients. Therefore, it is not possible to make definitive recommendations on this therapy, reinforcing the need for new randomized clinical trials to better answer the research question.
Implications: The development of this systematic review and meta-analysis enabled the expansion of knowledge about the possible benefits of automatic rotational therapy in critically ill patients, for future contributions to the scientific community and, due to the high heterogeneity between studies, it is shown as a field to be explored in future studies.
Keywords: Patient positioning, Ventilators, Mechanical, Intensive Care Units

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not applicable.

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ACUTE EFFECTS OF DIFFERENT ISCHEMIC PRECONDITIONING PROTOCOLS ON NEUROMUSCULAR PERFORMANCE IN CROSSFIT PRACTITIONERS: "CROSSOVER STUDY"

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Background: CrossFit is a modality that is characterized by high-intensity intervals, providing practitioners with the development of skills that promote improved sports performance. Similarly, ischemic preconditioning (ICP) is a form of training that aims to optimize muscle performance by increasing tissue tolerance to episodes of ischemia followed by reperfusion.
Objective: To compare the acute effects of different PCI protocols on muscle performance and superficial thermal response in amateur CrossFit athletes.
Methods: This is a crossover study. The participants were 15 subjects (10 men and 5 women) of both genders, aged between 18 and 35 years, with no history of metabolic, cardiovascular, or locomotor system diseases with an Ankle Brachial Index (ABI) between 0.91 and 1.30 and who responded negatively to all items of the Physical Activity Readiness Questionnaire/PAR-Q. After selection, they randomly performed one of the following three protocols: 1) ischemic preconditioning with 2 limb ischemia cycles (PCI-2C); 2) ischemic preconditioning with 4 cycles of limb ischemia (PCI-4C); 3) control ischemic preconditioning (PCI-CONT). Isometric strength measurements of elbow and knee extensors were performed before and after (WOD) and infrared thermography, at baseline, after PCI and WOD. Data were analyzed using SPSS software (v. 20.0), adopting a $P \leq 0,05$. ANOVA (one way) was used to analyze the time of execution of the WOD and to analyze the isometric strength of the elbow and knee extensors, in addition to repeated measures ANOVA to compare the averages, normalized, of the temperatures throughout the moments of evaluation.
Results: No significant differences were found between the protocols regarding the WOD execution time (F:2;12=0.09; P=0.916), as well as for the isometric strength of elbow extensors (F:2; 12=0.248; P=0.781) and knee (F:2;12=0.827; P=0.439). For the upper, lower and facial ROI thermograms, no significant differences were observed between the protocols ($P>0.05$); however, there were significant differences between assessments ($P<0.05$).
Conclusion: The protocols behaved similarly in terms of execution time and isometric strength of elbow and knee extensors. However, the normalized temperature means decreased over the course of the evaluations.
Implications: Contribute to an improvement in neuromuscular performance in CrossFit practitioners, in addition to showing a greater understanding of the surface temperature of the skin after application of ischemic preconditioning and training.
Keywords: Blood flow restriction, Performance, Thermography

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To family, employees, and volunteers.
Ethics committee approval: Ethics and Research Committee of the Health Sciences Center of the Federal University of Paraiba (CEP/CCS/UFPB), under CAAE 53658721.4.0000.5188 and opinion n°. 5.158.427

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TRANSCRANIAL DIRECT CURRENT STIMULATION AND NEURAL MOBILIZATION IN INDIVIDUALS WITH SCIATICA: RANDOMIZED CONTROLLED TRIAL PROTOCOL

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Background: Low back pain is the leading global cause of disability and Years of Life lived with Disability. About 10% of these episodes are classified as specific, with an identified cause, and may be related to discopathies with neurological deficits, including low

back-related leg pain. With three months of persistent pain, it is classified as chronic. It has been investigated that chronic musculoskeletal pain conditions promote structural and functional changes in the brain. Thus, using tDCS a treat these changes may add effect in reducing pain intensity when associated with standard radiculopathy treatment, such as Neural Mobilization.
Objectives: To verify if the effects of tDCS add benefit to pain intensity improvement in individuals with chronic lumbosciatalgia when associated with Neural Mobilization techniques.
Methods: Randomized, blinded controlled trial with participants with chronic lumbosciatalgia. The outcomes assessed are pain intensity, through the Numerical Pain Scale (NDS), as primary outcome; and as secondary outcomes, functional disability, through the Roland Morris Disability Questionnaire, and neuropathic symptoms, accessed by the Douler Neuropathique Questionaire (DN4) and PainDetect Questionaire (PD-Q). Evaluations will occur at the following times: before and after the intervention and at seven, fourteen, and thirty-day follow-up. The intervention consists of the association of tDCS with Neural Mobilization, and the participants will be randomly allocated to two groups: Experimental (Active tDCS and Neural Mobilization) and Control (Sham tDCS and Neural Mobilization). For the Statistical Analysis, the Kolmogorov-Smirnov test will be applied for data distribution and the Levene test to analyze the homogeneity of variance. ANOVA with a mixed design will be conducted for the primary and secondary outcomes. The interaction of time and group and the inter-group and intra-group differences will be analyzed for all variables. The Bonferroni test will be used in post hoc analyses to determine if there are differences between groups at the different intervention times.
Results: This trial is being conducted in its pilot study phase.
Conclusion: It is hypothesized that subjects presenting neuropathic pain, as in sciatica, may benefit from a treatment approach that stimulates adaptive neuroplasticity towards reducing pain intensity and functional disability by stimulating descending inhibitory pathways.
Implications: Such an approach proves promising as it shows a new therapeutic horizon for a condition considered difficult to manage clinically.
Keywords: Sciatica, Transcranial Direct Current Stimulation, Manual Therapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Research Ethics Committee (CEP) of Health Sciences Faculty of Trairi, Federal University of Rio Grande do Norte (FACISA/UFRN) through the national interface Plataforma Brasil (Registration number: 3.737.749)

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CORRELATION BETWEEN PRIMARY DYSMENORRHEA AND SLEEP QUALITY IN YOUNG NULLIPAROUS WOMEN

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Background: Primary dysmenorrhea (PD) is a gynecological disorder characterized by difficulty in menstrual flow that affects between 45 and 95% of women of reproductive age. This disorder can disturb sleep, especially during the first days of menstruation, when pain intensity tends to be greater, resulting in daytime fatigue, which suggests a reduction in sleep efficiency and a reduction in deep sleep.
Objectives: Correlate the symptoms of dysmenorrhea and sleep quality in young nulliparous women.
Methods: A descriptive, observational, cross-sectional study was conducted with a convenience sample of young nulliparous women. Women aged 18 to 30 years who had never become pregnant were selected. The participants were evaluated by the same examiner using the socio-clinical questionnaire, visual analog pain scale (VAS) and Pittsburgh Sleep Quality Index (PSQI). In the data analysis, the means and standard deviation of the variables were calculated according to the normal distribution of the sample, and the groups with and without dysmenorrhea were compared according to the level of sleep quality using the t-test for independent samples. The data were analyzed using the Statistical Program for Social Science program (SPSS version 23), considering a significance level of 5%.
Results: The sample of this study consisted of 69 nulliparous young adult women with a mean age of 21.86 $\pm$ 3.16 years. Dysmenorrhea had a prevalence of 65.21% (n=45), and most of them had regular menstrual flow. The level of dysmenorrhea pain was low, with a mean VAS of 3.59 $\pm$ 3.16 points. In the characterization of sleep quality, the average was 8.33 $\pm$ 2.43. Most participants had poor sleep quality (n=51), 14 had sleep disturbance, and 4 women had good sleep quality. There was a statistically significant difference between the groups with and without dysmenorrhea with the dysmenorrhea group showing higher values for sleep disorders ($p = 0.02$). There was a direct correlation between the presence of dysmenorrhea and domains of sleep quality. Subjective sleep quality (R=0.32), daytime dysfunction (R=0.37), and total sleep quality (R=0.35) showed moderate correlation with dysmenorrhea. Sleep latency showed a weak correlation with dysmenorrhea (R=0.29).
Conclusion: Young nulliparous women with dysmenorrhea have more sleep disorders than women without dysmenorrhea. There is a greater association in terms of subjective sleep quality, daytime dysfunction, sleep latency, and total sleep quality.
Implications: In scientific terms, dysmenorrhea directly impacts sleep quality and may directly impact the lives of these women in symptomatic terms (more dysfunction) and terms of quality of life. In clinical terms, this study is relevant for presenting the importance of assessing dysmenorrhea and quality of sleep in young nulliparous women co, considering that both conditions are prevalent in this population.
Keywords: Women's health, Dysmenorrhea, Sleep

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Universidade Estadual do Centro-Oeste - Ethics Committee Approval No. 5.299.509.

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ASSOCIATION BETWEEN DEPRESSION SYMPTOMS AND CARDIORESPIRATORY FITNESS IN WOMEN WHO WORK IN A UNIVERSITY ENVIRONMENT

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Background: Depression is the most common behavioral disorder worldwide, especially in women, and there is an inverse relationship between symptoms and cardiorespiratory fitness. Women with

depression are at risk for low CRF, increased chances of cardiovascular disease, and premature death.
Objectives: To identify the presence of depression symptoms in female university workers and to verify whether the maximum consumption of O_2 (VO2 max) is a predictor of depression symptoms in women.
Methods: This is a cross-sectional observational study involving workers from two higher education institutions located in two Brazilian states with homogeneous characteristics such as age, position, and weekly workload. A total of 223 women between 18 and 59 years old participated in the survey, recruited for convenience and who had been employed for at least six months. Those who did not complete all stages of the research were excluded a, and the sample consisted of05 women. To identify the presence of depression symptoms, the Beck inventory was used and, and to assess cardiorespiratory fitness, the Shuttle Run test was used normality was tested by Kolmogorov-Smirnov. The Mann-Whitney test was used to compare the groups of women with and without symptoms of depression and the effect size was classified according to Cohen f^2. The Chi-square test examined the association between the presence of depression symptoms and the cardiorespiratory fitness rating; linear regression verified whether cardiorespiratory fitness (VO_{2max}) was a predictor of depression scores, being adjusted according to age and climacteric. The p-value considered for the tests was < 0.05.
Results: Regarding the evaluated women, 27.83% (n=59) had symptoms of depression. VO_{2max} was lower (p=0.009, f^2= 0.18) in the group of women with symptoms [25.93 (2.18) mL/kg/min] when compared to those without symptoms [(26.97 (2.60)) mL/kg/min]. The highest proportion of women had VO_{2max} below the predicted value (n=53, 89.80%, p=0.011). VO_{2max} was a predictor of depression symptom scores [β= -0.671 (95%CI = -1150/ -0.191), p=0.006).
Conclusion: Women with depressive symptoms had lower VO_{2max} and identified it as a predictor of depression symptoms in women.
Implications: Frequently assess symptoms of depression and cardiorespiratory fitness to estimate early depressive symptoms and deficits in maximum oxygen consumption, with the aim of preventing and minimizing damage to the cardiovascular health of workers. In addition to promoting psychological follow-up and the regular and guided practice of physical exercises to improve health-related quality of life.
Keywords: Women, Depression, Cardiorespiratory fitness

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: under the number 5.274.887/2022.

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MYOFASCIAL FORCE TRANSMISSION BETWEEN LATISSIMUS DORSI, THORACOLUMBAR FASCIA AND GLUTEUS MAXIMUS: NEW EVIDENCE FOR UNDERSTANDING THIS PHENOMENON

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Background: The force generated by the Latissimus Dorsi contraction during adduction can be transmitted to the contralateral Gluteus Maximus, modifying hip resting position towards lateral rotation. It is suggested that this change is due to the connection of these muscles with the thoracolumbar fascia. However, it is not known whether the tensioning of the latissimus dorsi leads to a change in fascia stiffness. In addition, adduction may be less functional, making it necessary to evaluate whether the latissimus dorsi contraction in movements more present in activities of daily living and sports, such as, for example, shoulder extension, may also be capable of transmitting force to the Thoracolumbar Fascia and Gluteus Maximus.
Objectives: To compare lumbar stiffness and hip resting position between control and active tensioning of the Latissimus dorsi in shoulder extension conditions, providing evidence for a better understanding of the force transmission mechanism between Latissimus dorsi, Thoracolumbar fascia and Gluteus maximus.
Methods: 44 healthy individuals of both genders (age: 29.80$\pm$ 7.71 years, weight: 65.32$\pm$9.82 kg and height: 1.69$\pm$0.09 m) participated in this study. A portable instrument capable of recording passive tissue stiffness was used to assess lumbar stiffness. The hip resting position was calculated from the passive resistance torque, recorded with an isokinetic dynamometer during the medial rotation movement, while the electromyographic activity of the Latissimus Dorsi, Paraspinal and hip muscles was monitored. Both tests were performed under conditions of control and active tensioning of the Latissimus Dorsi, performed with the shoulder in 10° of extension, sustaining 10% of the participant's maximum RM. For statistical analysis, the Wilcoxon Test was used to compare the stiffness of the lumbar region and the Paired t-test was used to compare the resting position of the hip between the studied conditions.
Results: During active tensioning, an increase in lumbar stiffness was demonstrated compared to the control condition (Z=-5.54, p$<$0.001). The mean difference was -1.48$\pm$1.45 N/mm. For the resting position, a shift towards lateral hip rotation was demonstrated during active tensioning (t=5.303, p$<$0.001). The mean difference between conditions was 1.73$\pm$2.16°.
Conclusion: The findings of the present study demonstrated that the active tensioning of the Latissimus Dorsi in extension altered the passive properties of the hip and lumbar region, supporting the force transmission mechanism between the Latissimus Dorsi, Thoracolumbar Fascia and Gluteus Maximus. Although it was not possible to register the specific stiffness of the fascia, the lumbar evaluation was only performed in individuals who kept the paraspinals relaxed during tensioning, favoring changes in connective tissues to be better captured. For future studies, it is important to evaluate the relationship between the efficiency of force transmission and performance and the development of dysfunctions.
Implications: The myofascial force transmission between the Latissimus Dorsi, Thoracolumbar Fascia and Gluteus Maximus must be considered in the evaluation of muscle function, movement and dysfunction processes related to these regions. Support: CAPES, CNPq, FAPEMIG.
Keywords: Transmission, Fascia, Stiffness

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Ethics committee approval: Comitè de Ética em Pesquisa – CEP-UFMG - CAAE: 53641821.3.0000.5149.

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PERCEPTION OF CHILDREN'S CAREGIVERS IN A CONTEXT OF VULNERABILITY ABOUT THE GROW WITH YOUR CHILD PROGRAM

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Background: Studies from different areas, such as social sciences, pedagogy, psychology, and health, show that effective interventions during the first years of life, starting from pregnancy, have lasting repercussions until adulthood. From this, public policies and social programs aimed at early childhood emerge, one of them being the municipal project Grow with your Son, which was outlined in 2013 by the City Hall of Fortaleza, Ceará, with the purpose of accompanying the early childhood of families in situation of vulnerability, from pregnancy to three years of age. Contributing with effective care strategies so that families can meet the needs of their children. The program is inserted in the context of primary health care, where the Community Health Agent (CHA) is responsible for weekly home visits. During these visits, the CHA proposes activities to be developed with the children, activities that are in accordance with each stage of development, based on the program manual.
Objectives: To understand the caregiver's perception of the Grow with your Child program.
Methods: This is a field study, exploratory, descriptive, with a qualitative and quantitative approach. It was carried out in two primary health care units in the city of Fortaleza/CE, from May to September 2021. Five families enrolled in the program participated in the survey, who were being monitored weekly in Grow with your Child by the ACS and complying with the schedule. A socioeconomic form was applied to the caregivers, addressing issues of a social and economic nature, such as: Age, Education, Family Income, and the interviews were based on a semi-structured questionnaire developed by the researcher.
Results: The participants were 5 caregivers, mean age 28.6 ± 8.7 years, marital status 60% (n=3) single and 40% (n=2) married, mother's education 20% (n=1) medium incomplete, 60% (n=3) completed high school and 20% (n=1) incomplete college. 40% (n=2) of the mothers do some work at home and 60% (n=3) are dedicated exclusively to the role of mother and home caretaker. The dialogues arising from the semi-structured interviews refer to factors about the caregiver's perspectives on the program. The thematic class - Influence of the Program on Child Development, brought two categories of great importance during the speeches, namely: I. List of exercises and stimuli for development (71.4%) and Influence on affective bonds (28.6%).
Conclusion: The study demonstrated the great importance of this project from the mothers' perception, bringing positive statements about the program's influence on child development, especially in relation to the stimuli through the activities developed, as well as in the strengthening of the families' affective bonds.
Implications: Based on the research, it is suggested the inclusion of more professionals in carrying out the program and a better design of the project from the perspective found in this research.
Keywords: Child development, Early Childhood, Primary Health Care

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ASSOCIATION BETWEEN PARTICIPATION AT HOME AND FUNCTIONAL SKILLS IN CHILDREN AND ADOLESCENTS WITH DOWN SYNDROME: A CROSS-SECTIONAL STUDY

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Background: According to a biopsychosocial approach to health and disability, participation at home and functional skills are important components of the functioning. Therefore, knowledge about interactions between these components allows targeting specific interventions.
Objectives: This study investigated whether participation opportunities (frequency and involvement) for children/adolescents with Down syndrome (DS) in a realistic environment at their own home are associated with the functional skills related to the domains of *Daily Activities*, *Mobility*, *Social/Cognitive* and *Responsibility*.
Methods: This was an observational study. Forty-eight children/adolescents with DS participated (mean age: 10.73±3.43; n=27 female**).** They were evaluated using the Participation and Environment Measure for Children and Youth (PEM-CY) home environment setting (raw frequency and engagement scores) and Pediatric Evaluation of Disability Inventory speedy version (PEDI-CAT-SV) (continuous score).
Results: Significant and positive correlations were found between the frequency of participation at home with *Daily Activities* (ro = .320), *Social/Cognitive* (ro = .423) and *Responsibility* (ro = .455). For involvement, significant and positive correlations were found with *Daily Activities* (ro = .297), *Social/Cognitive* (ro = .380) and *Responsibility* (ro = .380). For the PEDI-CAT-SV *Mobility*, no significant correlation was found.
Conclusion: Higher frequency and involvement of participation at home are associated with greater functional skills assessed, except for *Mobility*.
Implications: This study provided pioneering insights about the relationships between the level of home participation and functional skills in DS.
Keywords: Down syndrome, Participation at home, Functional skills

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POST-TRAUMATIC STRESS DISORDER IN INDIVIDUALS WHO REQUIRED HOSPITALIZATION FOR COVID-19: A CROSS-SECTIONAL STUDY

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Background: COVID-19 can result in a wide variety of chronic health issues, taking an emotional toll with post-traumatic stress disorder (PTSD) such as impaired lung function, reduced exercise performance and decreased quality of life.
Objectives: To evaluate post-traumatic stress disorder (PTSD) in individuals after hospital discharge due to COVID-19 and its relationship with sociodemographic variables, quality of life, muscle strength, and functional capacity.
Methods: This is a cross-sectional study, conducted at the Laboratory of the Federal University of Pernambuco, including individuals of both genders aged between 31 and 79 years, recovered from COVID-19 and required hospitalization. Individuals with musculoskeletal disorders and cognitive disorders were excluded.
Results: A total of 153 individuals were deemed eligible for the study, and 60 completed the assessments. The age range ranged from 31 to 77 years, and 63.3% were female. PTSD was found in 48.3%, and 38.7% had partial symptoms; moreover, 65.5% of those with PTSD were obese and 62.1% were hypertensive. They were also more sedentary ($p=0.009$), were hospitalized in the ICU, and had more days hospitalized, respectively ($p<0.001$ and $p=0.010$), longer times on the TUG ($p=0.014$), shorter distances than those predicted in the 6MWT ($p=0.001$) and a reduction in all domains of the SF-36.
Conclusion: Individuals who recovered from COVID-19 with PTSD were characterized as being more sedentary, requiring ICU admission, more days in the hospital, presented a moderate risk of falling, had lower performance in functional capacity, and had respiratory muscle strength below the predicted values.
Implications: Analyzes of the results obtained from the study showed a marked presence of PTSD in patients who were hospitalized for COVID-19, in addition to showing a reduction in lung function, exercise performance, and impaired quality of life, even after recovery from the disease. Therefore, the results started for an early identification of the clinical conditions of the post-COVID-19 patient profile.
Keywords: Post-Traumatic Stress Disorders, COVID-19, mental disorders

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Acknowledgment: UFPE (Propg)
Ethics committee approval: Approved by the Ethics and Research Committee of the Federal University of Pernambuco, under opinion n°. 4,666,479.

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INFRARED THERMOGRAPHY FOR EVALUATION OF TENDING INJURIES: AN INTEGRATIVE REVIEW

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Background: Tendon dysfunctions are classified into overuse tears, injuries, and inflammatory conditions such as tendinopathies. Infrared thermography (IT) is a diagnostic technique that has been used to evaluate these disorders.
Objective: Identify how IT can be useful in tracking normal and/or abnormal thermal profiles in tendinopathies.
Methods: An integrative bibliographic review was carried out in the PUBMED, PEDro and CENTRAL databases, from 03/24/2022 to 04/05/2022, including the combination of terms and keywords using the Boolean operators OR and AND, with the following descriptors: Tendinopathy; Tendinitis; Tendinitis; Tendon injury; Tendon injuries; Risk of tendon injury; Risks of tendon injuries; Tendinosis; Tenosynovitis; Tendon overload; Paratendinitis; Paratendinitis; Peritendonitis; peritendinitis; Impact; impacts; Loom; Tears; Infrared thermography; Thermography; Thermographic change; Thermal imaging; Thermal Imaging; Infrared imaging; Infrared imaging; Temperature mapping; Temperature mapping; Infrared thermal imaging; Skin temperature; Grouped thermographic changes. Inclusion criteria: The search was carried out in English, without time restrictions, and articles with results and discussion: journals in all languages, clinical trial-type studies, precision and observational type of case study, case-control, cohort and cross-sectional studies, with a population of both sexes, and which used thermography as a screening method for tendon injuries. Exclusion criteria: Articles that did not present all the results used in the study.
Results: 1,279 studies were selected, and after reading the titles and abstracts, those that did not meet the criteria and duplicates were excluded, leaving 16 articles included. Of these, seven were selected to compose the results. In general, it was analyzed that IT is an excellent tool with potential for evaluation, diagnosis, monitoring, and prevention purposes, as it is possible to track asymmetries, inflammation, training effects, performance improvement and prevention of tendon injuries.
Conclusion: According to the literature review carried out, it was observed that IT is suitable for analyzing tendon tissues, taking into account different research strategies. However, it is important that new accuracy studies, such as randomized clinical trials, are developed since current studies do not yet have a consensual level of scientific evidence.
Implications: The IT used in this context of assessing tendon injuries becomes useful so that the physiotherapist has an assessment tool with excellent predictive power, so that his practice is safer and more supported.
Keywords: Thermography, Body temperature, Tendinopathy

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Acknowledgment: Not applicable.
Ethics committee approval: Not applicable.

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MOBILITY ASSESSMENT OF PATIENTS WITH DIABETIC FOOT ASSISTED AT THE AMBULATORY OF TECHNOLOGICAL INNOVATIONS IN HUMAN REHABILITATION (INOVAFISIO - UFC)

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Background: Diabetes mellitus (DM) is considered a chronic disease that affects about 3% of the world's population and is in ninth position among the diseases that shorten the years of life in a healthy way. DM generates repercussions on the body's systems, causing comorbidities, such as diabetic foot disease, considered one of the most serious complications of DM, causing effects in various aspects of the patient's life. Wounds in diabetic feet resulting from changes in gait causing falls, tissue injuries, hospitalizations, and amputations, compromising functionality and quality of life. Thus, it becomes a model of biopsychosocial care, based on the concepts examined in the International Classification of Functioning.
Objectives: Assess the mobility of patients with diabetic foot treated at the outpatient clinic for technological innovations in human rehabilitation (INOVAFISIO-UFC), investigating the main limitations and the degree of difficulty encountered in locomotion and/or movement of patients with diabetic foot.
Methods: This is a descriptive cross-sectional study. Participants of both sexes, over 18 years of age, diagnosed with type 2 DM with wounds on diabetic feet were included. People with intellectual disabilities that compromised the application of questionnaires, infected wounds and/or with an area greater than 15cm^2 were excluded. Data was collected between 2021 and 2022, at the INOVAFISIO outpatient clinic in Fortaleza - CE. The participants signed the Informed Consent Term. The World Health Organization Disability Assessment Schedule questionnaire (WHODAS 2.0-36 items) was applied to assess functionality in the last 30 days. In this study, the mobility domain was explored with 5 questions about locomotion with answers included in a scon a scale of 5 degrees of difficulty (none, mild, moderate, severe, treme or unable). Data analysis was descriptive, and results expresser sed as mean and standard deviation. The software used was Stata version 17.
Results: The sample consisted of 36 participants, divided equally between men and women, most of whom were married (55.56%) with a mean age of 55.58+15.25. When asked if they had difficulties standing for long periods, 83.33% reported some degree of difficulty, 27.78% (extreme or unable), 66.67% had difficulty getting up from a sitting position (22.22% moderate); 63.89% with difficulty moving around the house (30.56% mild); 63.89% reported difficulties leaving their home (22.22% moderate); 86.11% reported difficulty walking long distances (38.89% extreme or unable).
Conclusion: Participants with diabetic feet had limitations in the mobility domain, with the item standing up and walking long distances having a greater impact, with more than 27% of these patients having extreme difficulty or not being able to perform satisfactory mobility, compromising their quality of life.
Implications: Knowing the sample profile and associating an instrument that evaluates the kinetic-functional implications generated by diabetic wounds allows a targeted treatment based on the individual's functional independence.
Keywords: Diabetic foot, International Classification of Functioning, Diabetes Mellitus

Conflict of interest: The authors declare no conflict of interest.

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Ethics committee approval: CEP/PROPESQ/UFC number 3.212.729.

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SOCIODEMOGRAPHIC PROFILE, LIFE HABITS, HEALTH, SLEEP QUALITY AND WORK CAPACITY OF ROAD DRIVERS: A CROSS-CROSS STUDY

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Background: Sleep disorders have a multifactorial origin, and can generate a state of tiredness, drowsiness, affecting physical and mental health, increasing the risk of developing chronic diseases, implying good performance during the workday, affecting productivity.
Objectives: Evaluate the profile of road drivers, identify lifestyle habits, health conditions, sleep quality and ability to work.
Methods: This is a cross-sectional descriptive study. The participants were 100 workers in the role of road drivers, from a large transport company, who travel between the states of São Paulo to Rio, Minas, and Curitiba, who agreed to participate in the study. Socio-demographic and occupational data (age, marital status, sex, education, monthly income, time with the company, working hours) were collected. Practice of physical activity, anthropometric variables, health conditions such as current illnesses diagnosed, use of medication, and hours of sleep. Sleep quality and current work ability were assessed using a 0-10-point Likert scale (0-worst to 10-best). Anal, mean values, standard deviation, and absolute and relative frequency were discrepancies.
Results: The average age of the 100 workers was 47.5 $\pm$ 7.64 years, men (99%), married (70%), high school education and monthly income between 1 and 2 minimum wages. The time at the company was, on average, 5.89 $\pm$ 5.3 years, with shifts in three work shifts (morning, afternoon, and night). The anthropometric characteristics of the workers were an average weight of 87.67 $\pm$ 13.53 kg, height 173.5of 173.5 $\pm$ 7.9 cm, and BMI of $\pm$ 3.7 kg/m2. Regarding life and health habits, 60% of workers do not practice regular physical activity, only 22% have diagnosed diseases and 22% use medication. Mean sleep was 6.9 $\pm$ 1.2 hours and mean sleep quality was y 7.9 $\pm$ 2.2 points. Current work ability averaged 9.5$\pm$7.8 points, with the response varying greatly among workers.
Conclusion: Road drivers are older, male, sedentary, but with few diagnosed diseases and in good health and sleep quality, despite their profession with shift work and long itineraries.
Implications: It is essential to understand the profile of this group of workers due to their lifestyle so that there are strategies that reduce risk factors, improve health, and maintain the safety of users of this service.
Keywords: Sleep quality, Occupational health, Drivers

Conflict of interest: The authors declare no conflict of interest.

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EFFECT OF 2 YEARS OF THE COVID-19 PANDEMIC ON ANTHROPOMETRIC, HEMODYNAMIC AND FUNCTIONAL VARIABLES OF ELDERLY LOW-INCOME WOMEN

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Background: The COVID-19 pandemic (respiratory infection caused by the new severe acute respiratory syndrome coronavirus 2 "SARS-CoV-2") may have been responsible for the worsening of health indices (such as anthropometric, hemodynamic, and functional), including in the elderly population. Elderly individuals who previously participated in regular physical exercise programs and had their activities interrupted may lose or reduce the benefits acquired by exercise.
Objectives: To investigate the behavior of anthropometric, hemodynamic, and functional variables of previously active low-income elderly women during the first two years of the COVID-19 pandemic.
Methods: 56 low-income elderly women (73.01 $\pm$ 5.4 years) who discontinued their participation in community physical exercise programs (high-intensity interval training + resistance training; moderate-intensity continuous training + resistance training; and isolated resistance) due to pandemic containment measures, had body mass, body mass index (BMI), waist circumference (WC), blood pressure (BP), heart rate (HR), arterial stiffness, flexibility (sit and reach test), handgrip strength (hydraulic wrist dynamometer), lower limb strength (five-time sit to stand test, FTSTS), agility and balance (Timed Up and Go, TUG) and aerobic performance (6-minute walk test, 6MWT) evaluated before and after two years of the pandemic. All ethical procedures required for research were followed.
Results: There was a reduction in body mass (-1.3 kg, $P = 0.046$), BMI (-0.6 kg/m^2, $P = 0.002$) and HR (-4.3 bpm, $P = 0.004$); increased WC (2.6 cm, $P = 0.007$), systolic BP (6.9 mmHg, $P = 0.018$) and arterial stiffness (1.24 m/s, $P < 0.001$); and worse performance on the sit and reach test (-1.8 cm, $P < 0.001$), strength and handgrip (-1.1 kgf, $P = 0.009$) and FTSTS (1.0 s, $P = 0.003$) and 6MWT (-74.2 m, $P < 0.001$) over two years of follow-up.
Conclusion: The first two years of the COVID-19 pandemic were detrimental to the health of previously active elderly women, specifically in terms of WC, systolic BP, arterial stiffness, and functional capacity (flexibility and hand and lower limb grip strength). The worst decline found was in the 6MWT, which demonstrates a relevant worsening of walking (and cardiorespiratory) capacity in this population. Despite this, there were no significant changes in other study variables, which suggests that previously active elderly women may have less deleterious effect of aging even in longer periods of drastic changes in habits and routine, as an example, the COVID-19 pandemic.
Implications: The present study suggests the importance for elderly women to remain physically active and the urgent return of regular physical exercise to maintain (or decrease the loss/worsening) of cardiovascular health and functional capacity of low-income elderly women.
Keywords: Aging, COVID-19 pandemic, Interruption of Physical Exercise

Conflict of interest: The authors declare no conflict of interest.
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EFFECTIVENESS OF CONSERVATIVE THERAPY ON PAIN, DISABILITY AND QUALITY OF LIFE FOR LOW BACK PAIN IN PREGNANCY: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

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Background: The efficacy of conservative therapy for low back pain in pregnancy (PLBP) is unclear.
Objective: To investigate the efficacy of conservative therapy on pain, disability, and quality of life in PLBP.
Methods: The search strategy was conducted on six databases up to August 24, 2020, without date or language restrictions. Minimal intervention (i.e., placebo, sham, waiting list, or no intervention) was the comparator of interest. Selection of randomized controlled trials, data extraction and methodological quality assessment of included trials were conducted independently by two reviewers. The PEDro scale (0-10) was used to assess methodological quality. Effect sizes for specific therapies were pooled when possible, using random-effects models. The quality of the evidence was assessed using the Grading of Recommendations Assessment (GRADE) approach.
Results: Ten included trials provide uncertain evidence (low to very low quality) about the effects of auriculotherapy, education, exercise, exercise plus education, oil treatment, and osteopathy in pain, disability, and quality of life at short- and long-term. At short-term, mean differences (MDs) and 95% confidence intervals (CI) on a 0-10 points pain intensity scale were: for oil treatment, 2.8 points (2.6, 3.1) (n = one trial, 114 participants); for auriculotherapy, 1.6 points (1.2, 2.0) (n = one trial, 112 participants); for exercise, 2.2 points (-1.8, 6.2) (n = three trials, 297 participants).
Conclusion: There is an urgent need for larger, high-quality trials investigating the effects of conservative therapy on pain, disability, and quality of life in this population.
Implications: Our systematic review shows that the evidence is very uncertain about the effect of conservative therapy (e.g., oil treatment, auriculotherapy, and exercise) on pain, disability, and quality of life in the short- and long term.
Keywords: Gestation, Low back pain, Non-invasive

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PREVENTION OF LOW BACK AND PELVIC GIRDLE PAIN DURING PREGNANCY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMISED CONTROLLED TRIALS WITH GRADE RECOMMENDATIONS

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Background: Low back (LBP) and pelvic girdle pain (PGP) during pregnancy are related to high direct and indirect costs. It is important to clarify evidence regarding interventions to manage and prevent these conditions.
Objective: Investigate the efficacy and acceptability of the interventions to prevent LBP and PGP during pregnancy.
Methods: Searches were conducted up to January 6th, 2021, in the MEDLINE, PEDro, Cochrane Library, SPORTDiscus, CINAHL, AMED, Embase, and PsycINFO databases. Study eligibility criteria: (1) Pregnant women without LBP and/or PGP; (2) any prevention strategy on incidence of LBP and PGP and sick leave; (3) comparison to control; (4) quasi and randomized controlled trial. Study appraisal and synthesis methods: Two reviewers performed screening, data extraction and methodological quality assessments. Meta-analysis was performed, and Relative Risks (RRs) and 95% confidence intervals (CIs) were reported.
Results: The review included six randomized controlled trials involving 2231 participants. Evidence of moderate quality was found that "stand-alone" exercise is acceptable to pregnant women with lumbopelvic pain (LBPP) (RR 0.60 [95%CI 0.42-0.84]) and prevents episodes of LBP (RR 0.92 [95%CI 0.85-0.99]) in the long-term. Moderate to very low-quality evidence was found detailing the lack of efficacy of other interventions in the prevention of these problems in the short and long term. Limitations: A small number of trials included.
Conclusions: The efficacy of prevention strategies for episodes of LBPP and the use of sick leave during pregnancy is not supported by evidence of high quality.
Implications: Current evidence suggests that exercise is acceptable and promising for long-term LBP prevention. However, further high-quality trials with larger samples are needed.
Keywords: Low back pain, Pelvic girdle pain, Pregnancy

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EFFICACY OF PHARMACOLOGICAL AND NON-PHARMACOLOGICAL THERAPIES ON PAIN AND DISABILITY IN PLANTAR FASCIITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Plantar fasciitis (PF) is one of the most common musculoskeletal conditions of the foot. Estimates of lifetime prevalence are up to 34.7% of the general population. Most of the time, PF is self-limited, but the time for complete resolution of symptoms can take up to a year, impairing the quality of life of patients. Non-pharmacological therapies are the first-choice management option for PF, such as biomechanical support, stretching, and extracorporeal shock wave therapy [ESWT]. In addition, other pharmacologic options are commonly prescribed (e.g., nonsteroidal anti-inflammatory drugs [NSAIDs], botulinum toxin, platelet-rich plasma injections, corticosteroid injections). However, there is no consensus on the decision-making process because they are limited in scope and methodology. Current evidence also needs to be updated with the aim of providing reliable evidence for the management of PF, taking into account that some new types of pharmacological and non-pharmacological therapies are being investigated (e.g., orthoses, shoes).
Objective: To investigate the effects of pharmacological and non-pharmacological therapies on pain and disability in PF.
Methods: Systematic review of randomized controlled trials (RCTs). Data sources: AMED, MEDLINE, PEDro, COCHRANE, SPORTDISCUSS, CINAHL, EMBASE, and PsycINFO without language or date restrictions until February 3rd, 2023. RCTs that evaluated the efficacy of any pharmacological and non-pharmacological therapies in comparison with control (placebo, sham, waiting list, or no intervention) on pain intensity and disability in people with PF were the eligibility criteria. Two reviewers independently screened eligible studies, extracted data, assessed the methodological quality of included studies, and assessed certainty of evidence using the Recommendations, Assessment, Development, and Reviews (GRADE) grading framework.
Results: Seventeen different therapies investigated in 28 studies were included in the quantitative analysis. Moderate certainty evidence showed short-term effects of custom orthoses on pain intensity when compared with control (MD, -12.0 [95% CI: -17.1 to -7.0) and that orthoses did not reduce long-term pain intensity (MD, -5.9 [95% CI: -21.2 to 9.5]). Low-certainty evidence showed short-term effects in favor of taping (MD, -21.3 [95% CI: -38.6 to 4.0]) on pain intensity. For disability, low-certainty evidence showed that high-quality studies are needed.
Conclusions: The results of this meta-analysis should be evaluated by clinicians, stakeholders, and researchers, taking into account that most investigated interventions currently have low or very low certainty. Our findings expose the need to develop new larger studies with high methodological quality. Clinical
Implications: Current evidence supports customized orthoses and taping on short-term pain intensity when compared with controls with moderate and low certainty evidence, respectively. PROSPERO: (CRD42021224416).
Keywords: Plantar fasciitis, Randomized control trial, Systematic review

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EFFECT OF ISOMETRIC AND ISOTONIC EXERCISE ON SHOULDER PAIN, FUNCTION AND STRENGTH IN INDIVIDUALS WITH ROTATOR CUFF TENDINOPATHY

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Background: Rotator cuff tendinopathy (RC) is a common disorder of the shoulder complex, affecting approximately 24% of the Brazilian population over 20 years of age. One of the treatment strategies is conservative, including the use of therapeutic exercise. Most studies that evaluated the effect of exercise on this public have used isotonic exercises (which involve concentric and eccentric phases of muscle contraction), and few studies have demonstrated the effect of isometric exercise on individuals with RC tendinopathy. It is known that exercise, in general, has an analgesic effect described as exercise-induced analgesia. It has also been demonstrated that isometric exercise has the effect of decreasing pain summation. In addition, individuals with patellar tendinopathy showed a decrease in pain level immediately after using isometric exercise compared to isotonic exercise.
Objectives: To compare the immediate and 6-week effects of isometric and isotonic exercise training on shoulder pain, function, and strength in individuals with RC tendinopathy.
Methods: This is a randomized clinical trial. 30 individuals with RC tendinopathy were included, randomly distributed in the isometric (IM = 14) and isotonic (IT = 16) groups and evaluated for pain during arm elevation using the numeric pain rating scale, function using the Penn Shoulder Score questionnaire and isometric strength through manual dynamometry. After the initial evaluation (EV1) individuals performed the first exercise session, then they were reassessed immediately after the intervention (EV2) and after 6 weeks of treatment (EV3). Individuals performed stretching and strengthening of the scapular musculature, in addition to specific exercise for the RC, being isometric or isotonic depending on the randomization, twice a week for 6 weeks. RC strengthening included shoulder flexion, external and internal rotation exercises with load reassessment and progression. Comparison between groups and the 3 assessments was performed using a linear mixed model using SPSS 22.0 software.
Results: There was interaction between group and assessment for shoulder flexion strength ($F = 5.31$, $p<0.05$) and external rotation ($F = 5.82$, $p<0.05$). The IM showed a higher mean for flexion strength in EV3 compared to EV2 and greater rotation strength in EV3 compared to EV2 and EV1, in addition to being greater than the IT in EV3. Pain decreased and there was an improvement in function in EV3 in both groups ($p>0.05$).
Conclusion: Isometric exercise was not superior to isotonic for pain and function variables, but it was superior in terms of increasing shoulder elevation and external rotation strength.
Implications: In individuals with RC tendinopathy, the choice of exercise modality will not influence the improvement of pain or function, thus choosing the most tolerable one for the patient. However, in cases where there is a decrease in isometric strength, one can choose to use isometric exercise to increase strength gain.
Keywords: Pain management, Exercise therapy, Subacromial impingement syndrome

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FUNCTIONAL INDEPENDENCE, EXERCISE CAPACITY AND EXERTIONAL DESATURATION AFTER NON-CRITICAL COVID-19 IN NON VACCINED PATIENTS: SHORT AND MEDIUM-TERM IMPACTS

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Background: Studies point to the persistence of symptoms in patients with non-critical COVID-19 after hospitalization, pointing to impairments in functionality, exercise capacity and effort desaturation, which characterize the need for continuity of management and treatment after acute illness.
Objectives: To evaluate functional independence, exercise capacity, and effort desaturation after non-critical COVID-19 after hospital discharge.
Methods: A cross-sectional study included adult individuals with a noncritical COVID-19 diagnosis who were hospitalized for at least 24 hours between 30 and 180 days after hospital discharge. Participants were classified into 3 groups: G1M - one month after hospital discharge, G3M - three months after hospital discharge, and G6M - six months after charge. A digital form with clinical and sociodemographic questionnaire, modified MRC scale, Barthel Index, and London Chest Activity of Daily Living Scale was applied, in addition to the 6-minute Walk Test in G3M and G6M. The significance value was $p<0.05$.
Results: We included 64 individuals (G1M=18, G3M=25, G6M=21). There was a significant difference in Barthel Index between G1M and G6M (p=0.007). G3M walked 420m vs 442m of G6M (p=0.25). 48% of participants in G3M and 52% in G6M walked a distance less than 80% of predicted; 28% of G3M participants had >=4% drop in SpO2, vs 19.05% in G6M (p=0.478). There was a high prevalence of persistent symptoms, with a significant association between dyspnea (p=0.001), cough (p=0.038) and angina (p=0.001) and decreased functional independence.
Conclusion: After non-critical COVID-19, decreased functional independence was observed, with significant improvement 6 months after hospital discharge, in addition to decreased exercise capacity, the occurrence of desaturation on exertion, and high prevalence of persistent symptoms with no improvement 6 months after hospitalization.
Implications: Patients with persistent symptoms after COVID-19 should be evaluated and treated in pulmonary rehabilitation clinics. The changes caused by non-critical COVID-19 remain in the short and medium term, as in critical COVID-19.
Keywords: Acute post-covid-19 syndrome, 6-Minute Walk Test, Functional Independence

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Hospital Universitário João de Barros Barreto (HUJBB) - n° 4.069.290.

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DEFINITIONS AND ASSESSMENTS OF PAIN WITH IMPACT IN CHILDREN AND ADOLESCENTS: A SCOPING REVIEW

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Background: There is growing recognition that a substantial proportion of children and adolescents are challenged by pain. However, there are inconsistencies as to how pain is defined. There is no consensus on what constitutes pain with sufficient impact to warrant concern for a child or adolescent.

Objectives: The aim of this scoping review is to provide an overview of the descriptors used to define pain with impact on children and adolescents.

Methods: We considered studies on pain in children and adolescents of school age (6 to 19 years). The definitions of pain with impact in children and adolescents were descriptively reported. To analyze the structure of the pain definitions, we grouped the definitions according to the impact of pain and based on 4 main domains: (1) presence of physical complaint, (2) impact of physical complaint, (3) temporal characteristic of the physical complaint, and (4) association with secondary disorders.

Results: Searches identified a total of 52,731 records and based on our inclusion criteria, 436 articles were included in this scoping review. Of these, 352 studies proposed to assess pain as a primary outcome but did not provide information on how pain was defined. In these studies, the most reported painful condition was “chronic pain,” with symptoms over 3 months, and the most used measurement instrument was the Numerical Rating Scale (NRS). Eighty-four studies assessed the impact of pain and provided a definition. For the description of 'symptoms', the most used terms were “pain” or “discomfort”, but few studies mentioned “impact”, the most used terms being “not being able to participate in daily activities” and “functional disability”. The most used assessment instrument was the Numerical Rating Scale (NRS).

Conclusion: Most studies did not propose a detailed definition and there is no standardization of the terms used even to search for the same concept. The lack of consensus on a definition of pain with impact in children and adolescents makes it difficult to compare the findings.

Implications: Although many studies include in their primary data the investigation of pain with impact, there is a lack of descriptions regarding the 'impact' of the condition in children and adolescents. Although the most used tools for assessing pain with impact have been the Numerical Rating Scale (NRS) and the Visual Analog Scale (VAS), these tools are quantitative and may not capture the complexity of the pain or its potential impact on the patient's life.

Keywords: Pain with impact, Children, Adolescents

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PREVALENCE OF DISABLING MUSCULOSKELETAL PAIN IN CHILDREN AND ADOLESCENTS: A CROSS-SECTIONAL STUDY

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Background: The burden of musculoskeletal pain in children and adolescents is uncertain. Estimates of prevalence vary considerably and the impact of pain on children’s life is often not considered.

Objectives: To determine the one-month prevalence of disabling musculoskeletal pain in children and adolescents living in an urban setting in Brazil. The secondary aims of this study are: 1) to determine the body region with the highest prevalence of disabling musculoskeletal pain; 2) to understand the characteristics of the children with disabling musculoskeletal pain; and 3) to describe the parents' perception of the prevalence of disabling musculoskeletal pain.

Methods: This study was conducted in public and private schools in the state of São Paulo (Itu, Salto, São Sebastião, São Paulo) and Ceará (Fortaleza), Brazil. We measured the prevalence of disabling musculoskeletal pain (primary outcome) by frequency and percentage. We also measured pain intensity; the presence of psychosomatic symptoms; and quality of life.

Results: A total of 2,688 children and adolescents were included in this study, of which 27.6% (95% CI 25.95 to 29.33) reported disabling musculoskeletal pain in the last month. The body region with the highest estimated prevalence of disabling musculoskeletal pain was the back, followed by the legs. Children and adolescents with disabling musculoskeletal pain were mostly girls, with a mean age of 12.2 years old. In addition, we observed that parents tend to underestimate the presence of pain in their children.

Conclusion: The prevalence of disabling musculoskeletal pain in children and adolescents was 27.6%, with the back being the most affected body region.

Implications: Understanding the prevalence estimated of musculoskeletal pain in children and adolescents will allow us to understand the current scenario of this condition, especially in Brazil. Prevalence studies are important to elucidate the burden of the condition and to support the identification of future priorities in healthcare and research.

Keywords: Musculoskeletal pain, Children, Adolescents

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: This is a cross-sectional study approved by the Research Ethics Committee of the *Universidade Cidade de São Paulo* (CAAE: 18752219.0000.0064).

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MOBILITY OF PEOPLE WITH PHYSICAL DISABILITIES IN THE MARAJÓ ARCHIPELAGO ACCORDING TO ICF

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Background: The International Classification of Functioning, Disability and Health (ICF) is part of the Family of International Classifications of the World Health Organization (WHO) and acts as a tool for describing and organizing information about the functioning and disability of people with and without disabilities, providing a language standard. Marajó is a region with infrastructure peculiarities and disabled people who face very specific and little-known challenges there.
Objectives: Classify the mobility of people with physical disabilities in the Marajó archipelago according to the ICF.
Methods: Cross-sectional study, with a quantitative approach, referring to the activity profile of physical PCD residents in the municipalities of Marajó. The subjects were selected by convenience through the dissemination of the action in Basic Health Units visited by the group of the "Abrace o Marajó" Project between August 2021 and January 2022. The participants underwent a structured interview where they answered an adapted checklist, based on the ICF biopsychosocial model, which provides a standardized language. The ICF data used are related to the "activity and participation" domains, with a focus on mobility.
Results: The study included 51 physically disabled persons, with a predominance of age between 40 and 59 years (39.22%), men (54.90%), browns/mulattoes (62.75%). Most respondents had mobility problems, with 88.24% having difficulty walking (d450), 84.31% having difficulty lifting and carrying objects (d430), 78.43% having difficulty using transportation (d470), 64.71% using some locomotion device (d465), and 41.18% with impaired fine use of the hands (d440). These data suggest that the mobility deficit combined with the lack of accessibility may be one of the factors that most interfere with the lives of these participants, as it limits and/or restricts their participation in daily activities.
Conclusion: Disabled persons residing in Marajó have several limitations and/or restrictions on participation in day-to-day activities related to lack of mobility, the main limitations are those with the highest percentages, that is, walking, lifting, and carrying objects, and using means of transport. In this regard, it is vital to adopt public policies aimed at improving the infrastructure of streets and sidewalks in order to facilitate access for this population, thus promoting an increase in the level of activity and participation.
Implications: This study can contribute to the visibility of the needs of disabled persons who live in Marajó and the implementation of public policies to assist this population, as well as to understand their main difficulties and what accessibility measures can bring more autonomy.
Keywords: ICF, Disabled, Physically

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Ethics committee approval: CEP/ICS (CAAE/ICS: 47082621.6.0000.0018).

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INCREASED MORTALITY RISK DUE TO THE COMBINATION OF DEPRESSION AND 25(OH) D DEFICIENCY IN ENGLISH OLDER ADULTS

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Background: Depression is one of the most disabling diseases. It affects approximately 5.7% of older adults. In parallel, there is a high prevalence of vitamin D deficiency in this population, and it advantages the development of depressive symptoms. There are few studies about the influence of the association of depression and vitamin D deficiency on mortality.
Objectives: To investigate whether the combination of depression and vitamin D deficiency increases the mortality risk in older adults.
Methods: It is a cohort study with data from wave 6 (2012-3) of the English Longitudinal Study of Ageing, a population-based study with adults aged 50 years and over, living in England. Depression was measured by the Center for Epidemiologic Studies – Depression (CES-D-8) with a cut-off point of $\geq$4 symptoms, and deficiency of vitamin D ($<$25 nmol/L) was estimated by the blood levels of 25-hydroxyvitamin D [25(OH)D]. Thus, four groups were formed: depression/25(OH)D deficiency, no depression/no 25(OH)D deficiency, depression/without 25(OH)D deficiency, and no depression/with 25(OH)D deficiency. Follow-up time was the interval between the wave 6 interview and the last contact (wave 7 or wave 8) or death, and the maximum was 60 months. Stata 14.0 was used to perform Kaplan-Meier curves and Cox regression. The adjustments were by age group, sex, wealth, physical exercise, smoking, alcohol consumption, body mass index, basic and instrumental activities of daily living, and chronic and circulatory diseases.
Results: Of the 5,050 participants, 22.5% had depression, and 15.1% had 25(OH)D deficiency. When combining the outcomes, 4.85% had depression/25(OH)D deficiency and 67.2% had no depression/25 (OH)D deficiency. The combination depression/25(OH)D deficiency was more prevalent in women, lower wealth quintile, sedentary, smokers, obese, with difficulties in activities of daily living, and with chronic and circulatory diseases. At the end of the follow-up, the survival rate was 19.1% (95%CI:3.3–44.8) in those with depression/25(OH)D deficiency and 50.4% (95%CI:36.0–63.1) in the opposite group. In the adjusted analysis, the risk of death was 78% (95%CI:1.17–2.70) higher in the depression/25(OH)D deficiency group compared to the no depression/without 25(OH)D deficiency group. The other groups (depression/no 25(OH)D deficiency, no depression/ with 25(OH)D deficiency) had no significantly increased risk of death. Sensitivity analysis confirms the importance of grouping because depression alone is a risk factor for mortality (HR:1.33; 95%CI:1.02–1.73), while 25(OH)D deficiency alone is not (HR:1.26; 95%CI:0.95–1.68).
Conclusion: The grouping of depression and 25(OH)D deficiency is an independent mortality risk in older adults. The maintenance of adequate levels of 25(OH)D in this population is a challenge because there is a reduction in its metabolism in the skin and difficulty in consuming source foods. Thus, it is imperative to pay attention to the screening of depressive symptoms and 25(OH)D deficiency.

Proper management of these conditions will allow for greater independence and better health for the elderly.
Implications: It is important to identify, intervene and treat individuals with vitamin D deficiency or increased depressive symptoms to reduce these risk factors and improve the survival of the elderly.
Keywords: Depressive symptoms, Vitamin D deficiency, Mortality

Conflict of interest: The authors declare no conflict of interest.
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SWALLOWING FUNCTIONALITY IN SEVERE DEMENTIA: CASE SERIES

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Background: Dementia is a degenerative neurological syndrome, characterized by the presence of cognitive decline and/or behavioral changes that impact the functionality of the individual. The presence of dysphagia, change in swallowing, in the elderly with dementia can cause dehydration, malnutrition and respiratory infections, and can lead to death. This leads to an unfavorable prognosis, increasing the length of hospital stay and health expenses. The literature reports that, through the clinical evaluation of swallowing, it is possible to verify its functionality, classify the severity of dysphagia and collect information that helps in the understanding of the case and prognosis.
Objectives: To verify the functionality of swallowing in the elderly with severe dementia. It has a secondary objective to describe the sample and its clinical characteristics.
Methods: A case series was carried out through consultation of secondary data. The study took place at a Reference Center for Health Care for the Elderly in the Federal District, between September 2017 and December 2019. The following data were collected: age, sex, type of dementia, medical diagnoses, and functional classification of swallowing, which was defined after the patients underwent clinical evaluation. The functionality of swallowing was classified into normal, functional swallowing, mild, moderate, or severe dysphagia.
Results: The participants were five women and three men. The average age was 82.62 $\pm$ 6.23. All had a diagnosis of dementia, according to the criteria of the National Institute of Neurological and Communicative Diseases and Stroke - Alzheimer's Disease and Related Disorders Association and a 3-point score in the CDR (Clinical Dementia Rating). Four individuals had a diagnosis of vascular dementia, three (37.5%) Alzheimer's Disease and only one (12.5%) mixed dementia.

Four individuals (50%) had systemic arterial hypertension, three (37.5%) sleep disorders, three (37.5%) history of stroke, two (20%) depression, two (20%) hypothyroidism, two (20%) behavioral disorder, two (20%) dyslipidemia. Other conditions observed: postural instability, sphincter incontinence, asthma, osteoporosis and heart disease. At the time of the clinical evaluation of swallowing, five patients (62.5%) had dysphagia, three of whom were severe, one was moderate and the other mild. Two (20%) had normal swallowing, and one (12.5%) had functional swallowing.

Conclusion: Clinical evaluation was shown to be effective in identifying dysphagia in elderly people with dementia. However, through the objective assessment of swallowing, through imaging exams, it is possible to verify aspects that cannot be observed through clinical evaluation. Therefore, future studies may add objective assessment as a complementary evaluation and assist in the conclusion of the speech-language diagnosis.
Implications: There is a need for better management of dysphagia, including its evaluation with a reliable method, avoiding its underdiagnosis. There is a need for action at the three levels of health care. The results of this study can contribute to the construction of these actions.
Keywords: Elderly, Insanity, Dysphagia

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: This work was carried out with the support of the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) through the granting of a Master's scholarship.
Ethics committee approval: This study was approved by the Ethics and Research Committee of the Universidade de Brasília, with the number 3.121.872.

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FUNCTIONAL CAPACITY IN INDIVIDUALS WITH SPONDYLOARTHRITIS ACCORDING TO THE PHYSICAL ACTIVITY LEVEL

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Background: Spondyloarthritis (SpAs) constitutes a group of chronic inflammatory rheumatic diseases that affect the axial and peripheral skeleton, with pain and joint stiffness. There is evidence that individuals with SpA have worse functional capacity than healthy individuals. It is known that functional capacity can be influenced by the low physical activity level, but this relationship has not yet been fully established in these individuals.
Objectives: Evaluate functional capacity in individuals with spondyloarthritis according to physical activity level.
Methods: This is a cross-sectional study, with a non-probabilistic convenience sample. Individuals with a diagnosis of SpA, aged between 18 and 69 years, in follow-up at the Outpatient Care of the University Hospital Maria Aparecida Pedrossian and who agreed to participate in the research made up the spondyloarthritis group (SG, n=28) and were evaluated for their aerobic capacity (Chester Step Test); muscle strength (5-repetition Sitting and Standing Test - TSL); functional balance (Timed Up and Go Test - TUG). Furthermore, physical activity level was assessed by counting steps/day using a pedometer during seven consecutive days (first and last days were excluded from the steps/day average calculation). The control group (CG, n=25) was composed of individuals without rheumatic disease and submitted to the same evaluation. Statistical analysis: Student-test or Mann-Whitney and analysis of covariance (ANCOVA, covariate: count of steps/day).
Results: The groups were homogeneous in terms of age and sex. Aerobic capacity ($p<0,001$) was lower in the SG than in CG, while the time to perform TSL ($p<0.001$) and TUG ($p<0.001$) was greater in the SG than in CG. The physical activity level assessed by the pedometer was lower in the SG than in CG (EG: 5677 $\pm$ 3664; CG: 8309 $\pm$ 2513 steps/day; p=0.004). Through analysis of covariance, it

was observed that physical activity level significantly interferes with the evaluated functional capacity variables.
Conclusion: Individuals with SpA have worse functional capacity than healthy individuals, which may be, at least in part, a result of the lower level of physical activity.
Implications: From this study, it is suggested that physiotherapists and other health professionals include in their conduct the encouragement of physical activity regular practice for individuals with SpA, not only in the context of Primary Care, but also in the outpatient setting, with the aim to attenuate or prevent the deleterious effects of a sedentary lifestyle on functional capacity.
Keywords: Rheumatology, Fitness Trackers, Exercise Test

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Federal University of Mato Grosso do Sul (CEP/UFMS ethics approval number 5.175.689).

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VISUAL ASSESSMENT WITH COMPUTATIONAL TOOL IN INFANTS EXPOSED TO GESTATIONAL COVID-19: CROSS-SECTIONAL STUDY

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Background: Current literature has shown that COVID-19 during pregnancy can have a negative impact on maternal-fetal clinical outcomes, including miscarriages, preterm birth, and increased mortality (MEDEIROS et al., 2021; YANG et al., 2020). More recently, an association was demonstrated between the experience of the pandemic and a higher risk of delay in the development of fine motor skills and communication in 1-year-old children (HUANG et al., 2021). In adults, multiple neuro-ophthalmological manifestations have been described in association with COVID-19: visual field defects, optic nerve dysfunctions, eye movement abnormalities and nystagmus (GOLD; GALETTA, 2021). These findings raise concerns about the risks that gestational COVID-19 may bring to healthy vision development in children. However, these visual outcomes have been little explored in this age group so far, leading to difficulty in the early diagnosis of these conditions. With this, there remains a scientific gap on the risks in the visual development of the child population exposed to the coronavirus.
Objective: To evaluate fixation on the horizontal visual tracking in children of mothers exposed to gestational COVID-19.
Methods: This is a cross-sectional study. The evaluator did a stimulus 25cm from the child's face with the optotype with a figurative face from the Visual Battery by Ricci in horizontal visual tracking. The response was filmed with a camera to capture the near-infrared spectrum, and the filming was processed by software developed for temporal facial mapping and iris movement. Visual fixation was analyzed in the videos of horizontal visual tracking processed by the software by 2 independent researchers who classified the visual fixation as unstable ($<$3s) or stable ($\geq$3s) and recorded its total time. Statistical analysis was performed using the Statistica® 13.0 software, with a description in mean$\pm$SD. Between groups, the t-test was applied with $p<0.05$.
Results: The study included 15 infants separated into 2 groups, the COVID group with 7 participants, and the Control group with 8 participants. The sample showed birth weights of 3198$\pm$398 grams, and 1824$\pm$1040 grams, and gestational age of 38$\pm$1 weeks, and 33$\pm$5 weeks, in the COVID and Control groups, respectively. Unstable visual fixation was found in 14% of the COVID Group and 38% of the Control. The total fixation time was: 9.42 seconds $\pm$6.32 (COVID), and 4.62 seconds $\pm$3.11 (Control); however, it was not statistically significant (p=0.07).
Conclusion: Gestational COVID-19 has not been shown to influence stable fixation and total visual fixation time in infants.
Implications: The results of the study show that the coronavirus pandemic has had a smaller impact on the visual development of infants, which can be associated with mitigation measures and vaccination of the population.
Keywords: Eye movements, Premature birth, Vision screening

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics Committee for Research on Human Beings of the Federal University of Santa Catarina, CAAE 41500720.0.1001.0121.

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USABILITY AND FEASIBILITY OF IMMERSIVE VIRTUAL GAMES IN THE TREATMENT OF PEOPLE WITH PARKINSON'S DISEASE

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Background: Parkinson's disease (DP) is a chronic, neurodegenerative, and progressive disease that affects the central nervous system, compromising motor and cognitive functions, which impact quality of life and activities of daily living. Physiotherapy has explored virtual reality games as a therapeutic modality in neurorehabilitation through exergames, which are games that require body movement. However, there is still no consensus regarding the selection of immersive virtual reality (RVI) exergames aimed at training upper limbs (MMSS), making it necessary to explore innovative and immersive approaches.
Objectives: This study aimed to evaluate the feasibility and usability of selected exergames in Quest 2, prioritizing cognitive and motor aspects aimed at upper limbs in individuals with PD.
Methods: This is a quasi-experimental longitudinal clinical trial to assess the usability and feasibility of RVI games using Quest 2 in individuals with DP. A sample of 10 people diagnosed with DP, stable in relation to dopaminergic medication, in stages I to III of the Hoehn & Yahr classification, between 40 and 85 years old, with normal or corrected visual and auditory acuity and a minimum education of 4 years of formal study. 4 games were carefully selected: FIT-XR, Fruit Ninja VR, Beat Saber and Final Soccer. The interventions took place in two sessions with an interval of 30 minutes between them.

The level of safety in using Quest 2 was assessed using the Simulator Sickness Questionnaire (SSQ) and the usability of the system was assessed using the System Usability Scale (SUS); user experience was evaluated with the Game Experience Questionnaire (GEQ). Finally, the evolution of learning in games was evaluated according to the scores registered in each session.
Results: There were no complications during the consultations, the score related to the appearance of side effects in the SSQ was minimal (9.3), indicating no symptoms that prevented the continuation of the training. The games were approved according to the scores obtained in the GEQ (negative experiences 0.5/4, tiredness 0.25/4, and positive experiences 3.85/4). The usability of the system was considered approved with excellence by the SUS (94.5/100). Total scores between attempts in games steadily increased even after the 30-minute break.
Conclusion: The results obtained suggest the usability and feasibility of Quest 2, in addition to the existence of a therapeutic potential for the four games, being necessary; however, studies with longer training time and with larger samples confirm these preliminary results.
Implications: The results of this study indicate progress in the use of exergames, with Quest 2 having the potential to be another resource in the therapeutic management of PD; this was a pilot study that could serve as a basis to consolidate evidence that will guide physiotherapists in the use of devices for immersive virtual reality in an efficient, safe, comfortable, and innovative way.
Keywords: Parkinson's disease, Feasibility, Virtual reality

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics and Research Committee of the Faculty of Ceilândia of the University of Brasília (UnB), n° 5.901.014.

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TELEREHABILITATION VERSUS A DIGITAL BOOKLET FOR PATIENTS WITH CHRONIC NON-SPECIFIC NECK PAIN: STUDY PROTOCOL OF A RANDOMIZED CONTROLLED TRIAL

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Background: Neck pain is a common disabling condition that directly affects the performance of daily life activities and participation in professional, social and sports activities, being one of the main causes of functional disability in the world. Telerehabilitation-based treatments have demonstrated their importance due to their ease of use, low cost, and tendency to improve clinical outcomes. However, in the current scientific evidence, there is a lack of studies that exemplify telerehabilitation protocols in individuals with chronic non-specific neck pain.
Objectives: The study was to verify the effect of a telerehabilitation protocol versus an online self-care booklet in individuals with non-specific chronic neck pain.
Methods: This is a blinded, randomized, controlled clinical trial that compares a telerehabilitation program for neck pain with a control group that will receive an online self-care booklet. Seventy patients will be recruited. Assessments and measures will perform before treatment, after 6 weeks and at 3 months after randomization. For this purpose, assessments and follow-ups will be carried out completely remotely, through online platforms (Google Meet, smartphone messages, email) and telephone calls. The primary outcome will be functional disability measured by the Neck Disability Index questionnaire consisting of 10 items. Secondary outcomes will be pain intensity measured using the numeric rating scale, perceived global effect measured using the perceived global exertion scale, patient self-efficacy using the Pain Self Efficacy Questionnaire, quality of life using the SF-12, and kinesiophobia through the Scale of Kinesiophobia. This clinical trial was approved by the Research Ethics Committee (no. 5.458.454) and was registered in the Brazilian Registry of Clinical Trials (no. RBR-10h7khvk).
Results: No results so far.
Conclusion: This study will examine whether the telerehabilitation treatment approach is superior to the self-care booklet in patients with chronic neck pain, functional disability, pain intensity, perceived global effect, patient self-efficacy, quality of life and kinesiophobia.
Implications: The study will impact clinical practice because telerehabilitation is a treatment option that aims to promote improvements in the functional disability and pain intensity of individuals with nonspecific chronic neck pain. This form of treatment appears as an alternative to ease the logistical and organizational conditions promoted by face-to-face care.
Keywords: Telerehabilitation, Neck Pain, Exercise Therapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: This research was supported by PROEX/UFPA (Pro-Rectory for Extension and Post-Graduation of the Federal University of Pará) and FAPESPA.
Ethics committee approval: This clinical trial was approved by the Research Ethics Committee of the Federal University of Pará, Brazil (no. 5.458.454) and was registered in the Brazilian Registry of Clinical Trials (no. RBR-10h7khvk).

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EFFECTIVENESS OF PERCUSSIVE MASSAGE USING A PORTABLE DEVICE ON MUSCLE PAIN IN RECREATIONAL RUNNERS: RANDOMIZED CLINICAL TRIAL PROTOCOL

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Background: The increase in the number of running fans has made it one of the most popular activities in the world in recent years. Running requires repeated contractions, imposing a great mechanical load and tension on the lower limbs. As a result of the increase in shear stress, tissue can be altered, inducing neuromuscular functional impairments, damage to muscle fibers, edema, and muscle pain. Insufficient recovery from exercise-induced muscle damage impairs performance. To minimize the deleterious effects of muscle pain, research seeks to investigate which recovery technique is more effective. Among recovery strategies, local percussive massage using devices has gained notoriety in clinical practice. Some of the benefits of its use are the decrease in pain, gain in strength and

increase in range of motion. Data on the effectiveness of percussive massage are satisfactory but incipient. There is a wide variety with respect to the methods and population used. Systematic studies are needed to investigate the effectiveness of percussive massage using portable devices as a recovery technique in recreational runners.
Objectives: To evaluate the effectiveness of percussive massage on muscle pain in recreational runners using a portable device. Secondary objectives are to investigate muscle fatigue, general perceived effect, and performance after running.
Methods: This is a randomized clinical trial with a follow-up period of 72 hours. Athletes who run at least 6.5 km continuously and aged between 18 and 60 years will be included. Those who presented any medical condition not compatible with the study procedures, severe metabolic or cardiorespiratory disorders, musculoskeletal disorders in the lower limbs in the last 6 months, abrasions on the thigh, cramps during the evaluations and/or any change in sensitivity will be excluded. Immediately after the end of the race, the first evaluation session (pre-intervention) will be held, and participants will be evaluated for the level of muscle soreness (VAS), muscle fatigue (VAS), general perceived effect and performance (single-legged vertical jump). At the end of this process, percussive massage will be performed in the experimental group with a gun on the anterior part of the thigh, with a frequency of 55 Hz, for 10 minutes. In the control group, light and oscillatory pressure will be applied to the skin, simulating joint mobilization in the hip and knee, for 5 minutes each. Assessments of pain, fatigue and perceived general effect will be performed after the race, post-intervention, and 24h, 48h and 72h after the end of the intervention. The performance evaluation will be carried out in the pre-intervention, post-intervention, and 48 hours. The sample size was calculated using the R software. 86 participants will be needed to carry out the study.
Keywords: Muscle pain, Massage, Run

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Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Juiz De Fora – MG. 6.050.133

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MEASUREMENT PROPERTIES OF THE EQ-5D-Y-3L AND EQ-5D-Y-5L IN CHILDREN AND ADOLESCENTS WITH DISABLING MUSCULOSKELETAL PAIN

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Background: The EQ-5D-Y-3L and the EQ-5D-Y-5L are friendly-child versions of the EQ-5D instruments that measure health-related quality of life in children and adolescents (kids) aged 8-15 years old. However, both instruments' measurement properties have not yet been tested in Brazilian kids yet.
Objectives: This study aimed to test the EQ-5D-Y-3L and EQ-5D-Y-5L measurement properties in Brazilian kids with disabling musculoskeletal pain.
Methods: This is a measurement proprieties study with two periods of measures was conducted in 181 Brazilian kids with disabling musculoskeletal pain (i.e., who reported pain in the back, neck, arm, or legs that lead to school absenteeism and/or interference with normal and/or recreational activities) from public and private schools in Sao Paulo state. Kids answered the self-reported versions of the EQ-5D-Y-3L and the EQ-5D-Y-5L. We tested test-retest reliability using the Kappa coefficient for the descriptive system and intraclass correlation coefficients (ICC) for EQ-VAS. We tested construct validity (classified as sufficient if at least 75% of the results were in accordance with our pre-specified hypothesis) using the Pediatric Quality of Life Inventory questionnaire version 4.0 (PedsQL) and the Child Health Utility 9D (CHU9D). We also tested the ceiling and floor effects of the instruments using the dimensions' descriptive system and health profile and the feasibility by the missing responses.
Results: Most kids with musculoskeletal pain were female (61%) with a mean age of 12 years old (standard deviation: 3). In the descriptive system, reliability ranged from 0.32 to 0.47 for the EQ-5D-Y-3L and 0.20 to 0.49 for the EQ-5D-Y-5L. There was substantial reliability for the EQ-VAS (ICC: 0.80; 95% CI: 0.71, 0.86). Construct validity was sufficient for the EQ-5D-Y-3L and the EQ-5D-Y-5L compared to the PedsQL, sufficient for the EQ-5D-Y-5L and insufficient for the EQ-5D-Y-3L compared to the CHU9D (89%, 100%, 81%, and 47% in accordance with the hypothesis, respectively). There was as lower ceiling effect of the EQ-5D-Y-5L compared to the EQ-5D-Y-3L for all the dimensions of the descriptive system, except for the 'having pain or discomfort', while the health profile (11111) was 18.2% for the EQ-5D-Y-3L and 16% for the EQ-5D-Y-5L. The missing response rate ranged from 1.3% for the EQ-5D-Y-3L and 4% for the EQ-5D-Y-5L.
Conclusion: The descriptive system of the EQ-5D-Y-3L and the EQ-5D-Y-5L presented inadequate reliability and the EQ-VAS presented substantial reliability, but both instruments presented sufficient construct validity, except the EQ-5D-Y-3L compared to the CHU9D. Furthermore, the EQ-5D-Y-5L had lower ceiling effects compared to the EQ-5D-Y-3L and both instruments had good feasibility.
Implications: This study tested the measurement properties of the EQ-5D-Y-3L and the EQ-5D-Y-5L in Brazilian kids with disabling musculoskeletal pain. The results of this study could help clinicians to measure health-related quality of life in the youth population. Furthermore, the EQ-5D-Y-3L may facilitate the calculation of the quality-adjusted life of years in economic evaluations conducted in Brazil in the future.
Keywords: Health-related quality of life, Musculoskeletal pain, Children and adolescents

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: This study was approved by the Human Ethics Committee of Universidade Cidade de São Paulo – UNICID (CAAE: 18752219.5.0000.0064).

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OVERVIEW OF THE ECONOMIC BURDEN OF MUSCULOSKELETAL PAIN IN CHILDREN AND ADOLESCENTS: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Background: Some studies suggest a high economic burden among children and adolescents with musculoskeletal pain. However, there is no summary in the literature to understand the scenario of the economic burden of musculoskeletal pain in this population.
Objectives: This study aimed to synthesize the economic burden of musculoskeletal pain in children and adolescents.
Methods: We conducted electronic searches on MEDLINE, EMBASE, CINAHL, EconLit, NHS-EED, and HTA databases from inception to July/2022. We included cost-of-illness studies that estimated healthcare, patient/family, lost productivity, and/or societal costs in children and adolescents (up to 24 years old) with musculoskeletal pain. The primary outcome was cost, and the results were grouped by the same cost categories (i.e., healthcare, patient/family, lost productivity, societal), conditions, time horizon, and cost range for musculoskeletal pain. All costs were inflated to the same reference year (2021) and converted to American Dollars ($). The risk of bias the included studies was assessed using a checklist based on the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement.
Results: We included 45 cost-of-illness studies (n=665,623). Thirty-eight studies (84.4%) were conducted in high-income countries, six (13.3%) in upper-middle-income countries, and one (2.2%) in lower-middle-income countries. Regarding the risk of bias assessment, 75.5% (n=34 studies) clearly presented the unit costs, and 69% (n=31 studies) presented the expenditure data transparently. In contrast, more than half of the studies did not include productivity costs or sensitivity analysis. The annual healthcare costs ranged from $143 to $41,379 per child/adolescent (n=22 studies). The annual patient/family costs ranged from $287 to $27,972 per child/adolescent (n=9 studies). The annual lost productivity costs ranged from $124 to $4,671 per child/adolescent (n=7 studies). The annual societal costs ranged from $1,095 to $69,351 per child/adolescent (n=9 studies). Children and adolescents with juvenile idiopathic arthritis and musculoskeletal pain had higher annual incremental healthcare costs than children and adolescents without these conditions (mean difference: $3,800, 95% confidence interval [CI]: 50 to 7,550; mean difference: $740, 95% CI: 470 to 1,010, respectively).
Conclusion: The annual economic burden of musculoskeletal pain per child and adolescent ranged from $124 to $69,351.
Implications: This systematic review summarizes the evidence of the economic burden of musculoskeletal pain in children and adolescents. The results of this study showed that the musculoskeletal pain in children and adolescents seems to represent an important part of the economic burden in children's health. However, our estimates span a large range for all cost categories, making it difficult to interpret the economic burden in this population.
Keywords: Musculoskeletal pain, Systematic review, Economic burden

Conflict of interest: The authors declare no conflict of interest.

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CO-DESIGN OF AN INTERVENTION TO INCREASE LEISURE PARTICIPATION FOR ADOLESCENTS WITH CEREBRAL PALSY GMFCS LEVELS IV AND V

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Background: Adolescents with cerebral palsy (CP) experience restrictions in leisure activities participation, which can impact their socialization, self-determination, and quality of life. Patient and Public Involvement (PPI) is a crucial strategy for successful interventions where the target audience participates in the research stages. Strategies such as co-design, where healthcare professionals, patients, and families collaboratively discuss preferences, priorities, and necessary ingredients, can be crucial for intervention success.
Objectives: To co-design an intervention aimed at improving leisure activities participation of adolescents with CP in partnership with adolescents, families, and rehabilitation professionals.
Methods: The study was based on Participatory Action Research and was conducted through remote discussion groups with 5 adolescents aged 12-17 years with CP, 3 classified as level IV and 2 as level V on the Gross Motor Function Classification System, their families, 3 physiotherapists, and 2 occupational therapists. The Brazilian version of the Involvement Matrix (IM) was used to manage the participants' involvement in co-designing the intervention. The IM allows research participants to know different involvement roles in the research (Listener, Co-thinker, Advisor, Partner, and Decision-maker). The Participation and Environment Measure for Children and Youth (PEM-CY), community section, was used to assess the adolescents' participation profile.
Results: The preparation phase included 6 group meetings. In the first meeting, the IM was presented, and participants chose their roles for the study. Three chose the role of Decision-maker (1 professional, 1 adolescent with CP, and 1 mother), and 12 chose the role of Partner (4 professionals, 4 adolescents, and 4 mothers). Partners contributed suggestions, while decision-makers planned the participation groups. The second and third meetings included adolescents/families and rehabilitation professionals separately, where the concept of participation was discussed. The results of the PEM-CY were discussed in the fourth and fifth meetings. The last meeting of this phase included all participants, who discussed barriers and facilitators of participation and identified the necessary ingredients for the intervention. In this meeting, a model of intervention to increase the participation of adolescents with disabilities was presented as a strategy to facilitate the co-construction of the intervention proposal. The Co-design phase included three meetings with all participants; in the first two, co-construction of the intervention was conducted, and in the last, the co-constructed intervention was presented, and the intervention proposal was validated by all participants.
Conclusion: This study presents an innovative proposal that uses PPI for co-designing an intervention aimed at improving participation. The use of the IM optimized the participation of all involved parties who, through a collaborative process, were able to elaborate the intervention proposal.

Implications: The next step will be to test the feasibility of the intervention, co-designed with the target audience, which can lead to better results as it considers the real needs of the studied population.
Keywords: Patient and Public Involvement, Cerebral Palsy, Leisure

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Ethics committee approval: Ethics Research Committee (ERC) of the Faculty of Health Sciences of Trairi (FACISA) of the Federal University of Rio Grande do Norte (UFRN) - (CAEE: 51319321.1.0000.5568)

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HEART RATE VARIABILITY AND FUNCTIONAL CAPACITY OF INDIVIDUALS WITH TYPE 2 DIABETES AFFECTED BY COVID-19 IN THE LONG TERM

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Background: COVID-19 can worsen the clinical and functional condition of individuals with chronic diseases such as type 2 diabetes (DM2). There is a lack of knowledge regarding the long-term autonomic and functional impairments of individuals with T2DM affected by COVID-19.
Objectives: To assess whether individuals with DM2 affected by COVID-19 for one year or more have reduced heart rate variability (HRV) and functional capacity compared to those without a history of this disease.
Methods: This cross-sectional case-control study. The sample consisted of individuals with DM 2, with a history of COVID-19 (DMCoV Group), and without a history of COVID-19 (DM Group). All participants had their level of physical activity assessed using the International Physical Activity Questionnaire (short version). Heart rate (HR) and the following HRV measurements were evaluated at rest: standard deviation of normal R-R intervals (iNN) (SDNN); root mean square differences between successive iNN (RMSSD); percentage of successive iNN with difference >50ms (pNN50); low (LF) and high frequency (HF) spectral components in absolute (ms^2) and normalized (u.n) units. Functional capacity was evaluated based on the distance covered in the Incremental Shuttle Walking Test (ISWT) in meters. Data distribution was assessed using the Shapiro-Wilk test. Variables with normal distribution are expressed as mean ± standard deviation and the others as median [interquartile range]. Categorical variables were compared using the chi-square test, and numerical variables using the unpaired t-test or the Mann-Whitney test. For all tests, a significance level of 5% was adopted.
Results: Twenty-three individuals of both sexes participated in the study, nine from the DMCov group and fourteen from the DM group (61.78±10.39 years vs. 55.29±9.69 years, P=0.142; 33.3% women vs. 50% women, P=0.669). There was no significant difference in the level of physical activity between the DMCov and DM groups (P=0.235): very active (33.3% vs. 35.7%), active (22.2% vs. 50.0%), irregularly active (22.2% vs. 14.2%) and sedentary (22.2% vs. 0.0%). HR (71.9±10.5 bpm vs. 72.6±11.5 bpm; P=0.876), HRV measurements (SDNN(ms): 39.0±20.8 vs. 25.7± 13.5; P=0.076. RMSSD(ms): 20.7[9.3-57.8] vs. 13.2[9.1-26.7]; P=0.403. pNN50(%): 2 ,2[0.5-27.0] vs. 0.4[0.0-2.7]; P=0.159. LF(ms^2): 346.0[65.0-614.0] vs. 199 ,0[29.5-343.5]; P=0.277. HF(ms^2): 125.0[26.5-705.0] vs. 82.0[26.8-253.8]; P= 0.439 LF(un): 64.2±16.8 vs. 59.4±17.4 P=0.518 HF(un): 35.6±16.8 vs. 40.2±16.7; P=0.528) and functional capacity (272.5± 112.7 meters vs. 373.9±105.6 meters; P=0.051) showed no significant difference when comparing the groups DMCov and DM.
Conclusion: COVID-19 did not impair long-term cardiac autonomic modulation in individuals with T2DM. On the other hand, the fact that individuals with a history of COVID-19 walked an average of a hundred meters less on the ISWT compared to those without this history suggests impairment of functional capacity caused by COVID-19.
Implications: The findings of this study are preliminary and point to the need for future investigations involving a larger sample size and including other measures of modulation and cardiac autonomic function to confirm the results found.
Keywords: Diabetes Mellitus, COVID-19, Autonomic Nervous System

Conflict of interest: The authors declare no conflict of interest.
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UNPLANNED EXTUBATION: CHARACTERISTICS OF NEWBORN INFANTS HOSPITALIZED IN A NEONATAL INTENSIVE CARE UNIT

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Background: Unplanned extubation is an adverse event associated with endotracheal intubation and the use of invasive mechanical ventilation. Extubation failure and the need for reintubation are considered procedures that increase neonatal morbidity and mortality.
Objectives: To analyze the characteristics of newborns who had an unplanned extubation event during their stay in a neonatal intensive care unit (NICU).
Methods: The data from this study belong to a multicenter study called “Predictive factors for extubation failure in newborns admitted to a NICU: a multicenter study”. Data were collected from hospitalization records from July 2017 to 2019. Newborns who used invasive mechanical ventilation through an orotracheal tube for at least 24 hours were included. Data collection was carried out in six NICUs in five Brazilian cities: Manaus-AM (North), Natal-RN (Northeast), Brasília-DF (Central-West), Belo Horizonte-MG (Southeast) and Florianópolis and São José-SC (South). The information extracted from the medical records was transcribed into *Microsoft*

Office Excel, and the data were analyzed using the *Statistical Package for Social Science* - version 23.0. Results are presented as mean ± standard deviation, median (minimum and maximum amplitude) or absolute and relative frequency (n/%).
Results: Of 516 records, 50 (9.6%) events of unplanned extubations were identified in 3 of the 5 cities representing the regions of Brazil, being North (n=7/14%), Midwest (n=11/22%) and South (n=32/64%). The highest incidence of unplanned extubations was in premature newborns (n=36/72%), whose mean body weight on the day of the event was 2,312 ± 966 g. The median number of days on invasive mechanical ventilation was 5 (1-62) days. After unplanned extubation, 54% of the newborns needed non-invasive mechanical ventilation support (n=27) and 46% had failure and required reintubation in less than 48 hours (n=12), with a mean time between extubation and reintubation of 4.5 ± 13.72 hours.
Conclusion: Premature newborns weighing less than 2,500g presented, in this study, a higher incidence of unplanned extubation. In addition, the need for reintubation was frequent in the sample, thus indicating the adequacy of management during newborn care and handling of the endotracheal tube.
Implications: Knowing the characteristics of newborns with a higher incidence of unplanned extubation may improve care in the NICU, thus preventing the occurrence of adverse events.
Keywords: Newborn, Neonatal intensive care unit, Unplanned extubation

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: 36371320.5.1001.0118.

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PARTICIPATION OF INFANTS AT BIOLOGICAL RISK IS FACILITATED BY REMOTE INTERVENTION CARRIED OUT BY PARENTS — STEP PROTOCOL: RANDOMIZED CLINICAL TRIAL

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Background: Early intervention is highly recommended for infants who present some biological risk. Some principles of this intervention are well established, such as family-centered practice, parental involvement in-home therapy, and environmental enrichment. However, although participation is currently considered the main goal to be achieved in the intervention, few protocols assess this component, and even fewer use participation as a component of early intervention. Furthermore, it is essential to verify the effectiveness of remote protocols, considering that this modality of therapy delivery has been adopted more frequently in recent years.
Objectives: To verify the effectiveness of the remote STEP protocol (composed of stimulation of motor skills, participation, mother-child interaction, and environmental enrichment) in the participation of infants at biological risk at home in the first year of life.
Methods: This is a randomized controlled clinical trial. The study included 46 infants with biological risk (prematurity, low birth weight, hospitalization, cardiopulmonary resuscitation) between 3 and 9 months, who were randomized into the STEP Group (n=24, mean age=6.3 months) and the Control Group (n=22, mean age=6.4 months). Assessments were blinded, and infants were assessed for their frequency and involvement in participation at home by Young Children's Participation and Environment Measure (YC-PEM) via telephone interview, before and after the intervention. The STEP group 79had goals established by the parents and the intervention consisted of specific motor training (based on the principles of motor learning, focus on repetition, variation, and increasing the complexity of the task); stimulation of participation (increased involvement of the infant in daily tasks, such as feeding and self-care, and playing with family members); guidance regarding mother-child interaction and environmental enrichment (promotion of an environment rich in stimuli, with greater possibilities for exploration). The control group had its goals defined by the therapist, and the intervention was based on motor stimulation, according to the infant's abilities. In both groups, the intervention was carried out by the parents at home, with instructions given by the therapist remotely, lasting 10 weeks (5 times a week, 30 minutes a day). Infants showed no differences in baseline measurements. A Mann-Whitney test was applied to verify the difference between the change of groups after the intervention, with a significance of 5%.
Results: The STEP group showed significantly higher improvement compared to the control group after the intervention, in the domain of frequency (p=0.005) and participation involvement (p=0.005).
Conclusion: The STEP protocol proved to be promising to enhance the participation at home of infants at biological risk in the first year of life. This result reinforces the importance of stimulating participation in activities of daily living and interactions with the family.
Implications: Early intervention protocols that stimulate not only motor domains but also involve a biopsychosocial approach, should be included in clinical practice. The results demonstrate how this model, which takes into account preferences and family involvement, encourages participation, and has a low investment cost, can improve functionality in the first year of life.
Keywords: Early intervention, Infants, Participation

Conflict of interest: The authors declare no conflict of interest.
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ASSOCIATION BETWEEN ARTHRALGIA AND TIME OF HORMONIOTHERAPY IN WOMEN SUBMITTED TO ONCOLOGICAL TREATMENT

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Background: Hormone therapy is a highly effective treatment for reducing recurrence and mortality in women with breast cancer. However, it can cause several adverse effects such as arthralgia. Few studies investigate the factors that can influence arthralgia in women undergoing cancer treatment.
Objectives: to investigate the association between the duration of hormone therapy and arthralgia in women undergoing treatment for breast cancer.

Methods: This is a cross-sectional analytical study. The study included women using hormone therapy (Tamoxifen or Anastrozole) for breast cancer and complaining of arthralgia (at least 1 point on the Numerical Categorical Scale - NCS and 1 joint located on the Brief Pain Inventory - BPI). Women who had stage IV cancer, with the presence of lymphedema, limitation to answer questionnaires and women with tumor recurrence were excluded. Data distribution was evaluated using the Kolmogorov-Smirnov test. To determine the isolated contribution of Hormone Therapy Time (independent variable) to arthralgia (dependent variable) in women of hormone therapy for breast cancer, linear regression analyzes, and Spearman correlation coefficients were performed. The significance level was set at 5%. The correlation was classified according to the following criteria: weak (0.0 - 0.4), moderate (0.4 - 0.7) and strong (0.7 - 10).
Results: ninety-two women with a mean age of 53.68 years and a standard deviation of 9.53 participated in the study. The mean duration of hormone therapy use was 2.44 years, with a standard deviation of 1.45, and the mean duration of arthralgia was 5.38. with a standard deviation of 2.73. Arthralgia and duration of hormone therapy did not present a significant correlation (p=0.11; r=0.16).
Conclusion: no association was observed between the duration of hormone therapy and arthralgia in women undergoing treatment for breast cancer.
Implications: Although numerous studies report the presence of arthralgia in women who use hormone therapy in the treatment of breast cancer, the duration of hormone therapy does not seem to influence this complaint. However, prospective cohort studies are needed to confirm the effects of hormone therapy duration on arthralgia in women undergoing cancer treatment.
Keywords: Arthralgia, Hormone therapy, Association

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FLEXIBILITY AFTER 16 WEEKS OF PILATES EXERCISE IN WOMEN WITH ARTHRALGIA AFTER HORMONE THERAPY FOR BREAST CANCER

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Background: arthralgia is a common symptom after treatment with hormone therapy for breast cancer and can lead to several complications, including loss of flexibility. Studies have recommended performing the Pilates exercise to minimize morbidities resulting from cancer treatment.
Objectives: to evaluate flexibility after 16 weeks of Pilates exercise in women with arthralgia after hormone therapy for breast cancer.
Methods: observational study, carried out at the physiotherapy clinic of the High Complexity Oncology Unit. Women with complaints of arthralgia during hormone therapy and who participated in a Mat Pilates exercise program (twice a week for 16 weeks) were included, and women with active cancer or who did not complete the 16 weeks of exercise were excluded. Flexibility was evaluated through the "sit-and-reach test" using the SANNY Instant Unisex Pro Portable Wells Bench. Statistical analysis was performed using GraphPad Prism. The data were submitted to the Kolmogorov-Smirnov normality test, followed by the paired t-test (parametric data) or the Wilcoxon test for repeated measures (non-parametric data), considering a significance level of 5%.
Results: eight women with a mean age of 57.25±12.61 completed the 16 weeks of performing the Pilates exercise, 5 using hormone therapy with Tamoxifen and 3 using Anastrozole. The women had mean and standard deviation for flexibility of 18.12±5.66 at the beginning and 22.75±6.88 after 16 weeks of Pilates exercise (p=0.004). The group that used Tamoxifen presented flexibility of 16.7±4.99 before and 21.4±7.57 after Pilates (p=0.04) and the group using Anastrozole presented flexibility of 20.5± 7 before and 25±6.26 after Pilates (p=0.16).
Conclusion: There was greater flexibility in women after performing the Pilates exercise.
Implications: Pilates exercises have the potential to improve the flexibility of women undergoing cancer treatment. However, randomized controlled trials, with a significant sample, are needed for better scientific evidence of the effects of Pilates exercise on the flexibility of women with arthralgia.
Keywords: Arthralgia, Pilates, Pliability

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Acknowledgment: Not applicable.
Ethics committee approval: University of Brasilia, n° 3.022.045.

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ELECTROMYOGRAPHIC PROFILE OF THE WRIST AND ELBOW FLEXORS DURING PNF MOTOR IRRADIATION

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Background: Proprioceptive Neuromuscular Facilitation (PNF) is a concept that has been applied to treating numerous disabling disorders. Among the basic PNF procedures, there is motor irradiation, in which resistance is applied to a body segment to generate muscle activation in another segment and thus obtain improvement in muscle strength. The generated muscular activation can be analyzed in several ways, one of them being Electromyography (EMG). Electromyographic analysis has suggested that target muscles of irradiation demonstrate electromyographic activity during irradiation in healthy individuals and in those with neurological disorders. Despite this, the neuromuscular activation profile (amplitude and temporality) resulting from the different stimuli and positions used in PNF has not yet been investigated.
Objectives: To analyze the neuromuscular activation profile of upper limb muscles in healthy individuals during the application of different PNF irradiation protocols.
Methods: This is a cross-sectional study in which 32 healthy individuals of both sexes, aged between 18 and 45 years. After signing the consent form, the handedness of a subject in activities of daily living, level of physical activity, and sociodemographic characteristics will be identified. First, the EMG signals of the upper limb muscles (biceps brachii, brachioradialis, flexor carpi radialis, and triceps) will be collected during a maximum voluntary contraction (3 repetitions held for 3s with an interval of 30s between contractions).

Then, the EMG signal of these muscles of the non-preferential limb will be collected, during 4 PNF irradiation techniques in a randomized order for each participant. Each irradiation will be applied 3 times, maintaining the contraction for 5s, with a 10s interval between them. After each irradiation will be checked the perceived exertion.
Results: The study is in the data collection phase.
Conclusion: It is expected through this study to verify if the applied irradiation techniques activate the musculatures described anecdotally in the clinical literature.
Implications: The study can generate an understanding of motor irradiation and the use of the technique to improve the strength of a body segment.
Keywords: Irradiation, Proprioceptive neuromuscular facilitation, Electromyography

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ASSOCIATION BETWEEN ENVIRONMENTAL FACTORS AND AFFORDANCES FOR THE NEUROPSYCHOMOTOR DEVELOPMENT: A CROSS-SECTIONAL STUDY

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Background: In the world, 1 billion children live in poverty. Regarding developing countries, Brazil has the highest rate of social inequality. Environmental factors may impact child development and, consequently, functionality.
Objectives: to analyze the association between environmental factors and affordances in the home environment of healthy infants exposed to low socioeconomic status (SES).
Methods: At 3 months old, 128 full-term healthy infants were divided into two groups: the exposed group (EG), infants classified as low SES, and the comparison group (CG), infants without low SES exposition; both according to the income-to-poverty ratio (PIR). The affordances in the home environment were measured by The Home Environment for Motor Development – Infant Scale (AHEMD-IS); physical space, variety of stimulation, gross-motor toys, fine-motor toys, and total score. It classified the affordances: as less than adequate (LTA), moderately adequate (MA), adequate (A), and excellent (E). In the SPSS 2.0, comparison tests and stepwise multiple linear regression were performed ($p < 0.05$).
Results: Infants of the EG had significantly the lowest mean in length at birth (p=0.03; Cohen's r= 0.157); PIR ($p<0.01$; Cohen's r= 0.351); maternal age ($p<0.01$; Cohen's r= 0.50); marital status of guardians ($p<0.01$; Cohen's r= 0.31); the number of children living in the household ($p<0.0001$; Cohen's r= 0.29); and maternal education ($p<0.01$; Cohen's r= 0.73). The home environment of the EG presented less affordances for child development in the dimensions of gross motor toys ($p<0.0001$; Cohen's r= 0.353; EG, md= 2.00 [1.00 – 3.00] vs GC, md 3.00 [2.00 – 4.50]); fine motor skills (p=0.0001 Cohen's r= 0.327; EG, md= 1.00 [0.00 – 2.00] vs GC, md 2.00 [1.00 – 4.00]); and the total score ($p<0.0001$; Cohen's r= 0.377; EG, md=15.00 [13.00 – 18.00] vs GC, md = 19.00 [16.00 – 22.00]). Maternal age was a protective factor for obtaining the LTA score (p = 0.043, OR: 0.829 [0.692 - 0.994]). Therefore, each additional year in maternal age decreases 17.01-fold the chance the affordances in the home environment score LTA.
Conclusion: The home environment of infants exposed to poverty presented less adequate affordances for neuropsychomotor development, mainly in the dimensions of gross motor toys, fine motor toys, and, consequently, total score. In contrast, the higher the maternal age, the better the results regarding the quantity and quality of affordances present in the home environment.
Implications: Knowledge about offering adequate affordances for neuropsychomotor development is essential for providing healthy child development. Basic kits of age-appropriate toys offered during the follow-up may be useful as palliative and low-cost tools.
Keywords: Low Socioeconomic Status, Maternal Age, Child Poverty

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NORMATIVE VALUES FOR ISOMETRIC MUSCLE STRENGTH OF HIP FLEXORS WITH HAND-HELD DYNAMOMETER IN UNIVERSITY ATHLETES

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Background: Establishing normative strength data can assist professionals in guiding post-injury rehabilitation and be a criterion for deciding discharge for sports return.
Objectives: To establish reference values for isometric hip flexor muscle strength in college athletes.
Methods: This was a cross-sectional observational study. The athletes were submitted to an isometric muscle strength evaluation of the hip flexors through a hand-held dynamometer (Medeor Medtech Tecnologia em Saúde Industria e Comercio Ltda). The athletes remained in dorsal decubitus position on a stretcher, with the tested leg flexed 10 cm above the surface to start the test. The dynamometer was positioned on the anterior part of the leg, above the talotibial joint line. The lever arm was defined as the distance, in meters (m), between the anterior superior iliac spine and the dynamometer application point. The athletes performed three isometric contractions of 5 seconds, with a rest interval of 30 seconds between repetitions. If there was a discrepancy greater than 10% in the first three

repetitions, a fourth repetition was performed. The isometric force data were expressed in kilogram-force (Kg/f) and converted to newton (N) for the calculation of torque (N.m). The normality of the data was verified using the Shapiro-Wilk test. The mean and standard deviation were calculated, followed by and by independent samples t-test. A significance level of ($p > 0.05$) was adopted.
Results: Thirteen female athletes (22 $\pm$ 2.19 years; 1.63 $\pm$ 0.06 m and 63.5 $\pm$ 16.9 kg) and 14 male athletes (23.85 $\pm$ 6.97 years; 1.75 $\pm$ 0.06 m and 72.8 $\pm$ 8.6 kg) participated in the study, totaling 27 college athletes. The athletes were classified according to the International Physical Activity Questionnaire (IPAQ) as Very Active (29.62%), Active (55.55%) and Irregularly Active (14.81%). Male athletes produced significantly more torque (109.36 $\pm$ 43.70 N.m; CI 84.12 - 134.59 N.m) when compared to female athletes (73.05 $\pm$ 14.26 N.m; CI 64.43 - 81.67 N.m).
Conclusion: This study provides a normative database on isometric hip flexor strength measured with a hand-held dynamometer. In general, differences in strength were present between the sexes, with men showing higher torque values compared to women.
Implications: The isokinetic dynamometer is the gold standard instrument for quantifying muscle strength. However, it is not accessible to all athletes. Therefore, we sought an alternative for the quantification of muscle strength in an affordable way. These data provide a description of hip flexor muscle strength in college athletes in order to assist professionals in post-injury rehabilitation, and to be a discharge criterion for sports return.
Keywords: Muscle Contraction, Rehabilitation, Lower Extremity

Conflict of interest: The authors declare no conflict of interest.
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BARRIERS AND FACILITATORS TO ACCESS TO REHABILITATION SERVICES IN BRAZIL FOR POST-STROKE INDIVIDUALS IN THE FIRST SIX MONTHS OF RECOVERY

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Background: Post-stroke individuals should have immediate and full access to rehabilitation services after hospital discharge. This access must be obtained in the first six months of the event, a period where the chances of recovery are greater. Thus, it becomes relevant to know the barriers and facilitators of this access. However, studies on this topic were not found in developing countries such as Brazil.
Objectives: To identify barriers and facilitators to access to rehabilitation services for post-stroke individuals discharged from a stroke unit of a public hospital in Brazil in the first six months of recovery.
Methods: A cross-sectional and descriptive study was developed. Sociodemographic and clinical-functional data were collected in the hospital during the acute phase. Six months after discharge, data on barriers and facilitators to access to rehabilitation services were collected, considering 20 aspects related to the economic conditions and displacement to rehabilitation services, quality, and organization of rehabilitation services, as well as individual's personal conditions.
Results: 174 individuals (62$\pm$21 years old) were included. Among the 20 aspects analyzed, 17 (85%) were most frequently pointed out as facilitators. The main facilitators pointed out was the patient's expectation of the treatment and the quality of care offered, identified by the vast majority (>79%) of the individuals. In addition, all aspects related to the quality of rehabilitation services were pointed out as facilitators by the majority of the subjects. Three (15%) aspects were most frequently pointed out as barriers: income available for health care (49.4%), waiting time to make an appointment and be attended (47.2%), and scheduling process (45.4%).
Conclusion: More facilitators than barriers were pointed out. That is, in the first six months of recovery, aspects related to economic conditions and displacement to rehabilitation services, organization of rehabilitation services, quality of rehabilitation services and personal conditions of the individual, have, for the most part, positively influenced the access to rehabilitation services for post-stroke individuals.
Implications: Considering the identified barriers, public policies to subsidize health costs and optimize the waiting time and scheduling process in rehabilitation services should be considered relevant tools to facilitate access to rehabilitation services for post-stroke individuals. Likewise, human, and financial resources must be directed towards promoting the enabling factors.
Keywords: Stroke, Access to rehabilitation services, Barriers and facilitators

Conflict of interest: The authors declare no conflict of interest.
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SHORT PHYSICAL PERFORMANCE BATTERY AS A PREDICTOR OF MORTALITY AMONG OLDER ADULTS: SYSTEMATIC REVIEW WITH META-ANALYSIS

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Background: Physical performance is an essential component in the clinical assessment among older adults, and its decline as assessed by the Short Physical Performance Battery (SPPB) is associated with increased risk for hospitalization, institutionalization, falls, and disability. Although a SPPB score <10 seems to be predictive of mortality, according to previous studies, the cutoff values are heterogeneous, which makes it difficult to really know the predictive

power of SPPB for mortality and the magnitude of the increase in the probability of death as the score decreases.
Objectives: To analyze the predictive power of SPPB for mortality among older adults due to a systematic review with meta-analysis.
Methods: Systematic review with meta-analysis, prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA-P) recommendation, registered in the International Prospective Register of Systematic Reviews - Prospero (CRD42021256040). Prospective and retrospective longitudinal studies conducted with individuals aged 60 years or older were included, considering publications in full text, abstracts, and any identified unpublished data. The search was performed in the following databases with no language or date restrictions: MEDLINE via PubMed, Embase, Latin American and Caribbean Literature on Health Sciences (LILACS), Physiotand herapy Evidence Database (PEDro). The risk of bias was analyzed using the Quality in Prognosis (QUIPS) tool. For the meta-analysis, R software with the "meta" package (version 4.9-6), the "metaprop" function for proportion data and the "metamean" function for continuous data was used. Pooled results of proportion and means (continuous data) with their respective 95% confidence intervals (CI) were obtained using the inverse variance method with a random effects model. Heterogeneity was assessed by calculating i2. Values greater than 50% were considered substantial heterogeneity.
Results: Meta-analysis including 13 studies with 6. 390 participants suggest that elderly with SPPB between 0-3 are more likely to die compared with those with SPPB between 4-12 [Odds Ratio (OR) 2.58; 95% CI (1.93-3.44); moderate certainty of evidence]; elderly with SPPB between 0-6 are more likely to die compared with those with SPPB between 7-12 [Odds Ratio (OR) 2.30; 95% CI (1.94-2.73); moderate certainty of evidence]; and elderly with SPPB between 0-9 are more likely to die compared with those with SPPB between 10-12 [Odds Ratio (OR) 2.17; 95% CI (1.75-2.68); high certainty of evidence].
Conclusion: The chance of death increases as the SPPB score decreases, which reinforces the predictive capacity of this variable. It is suggested the development of further studies with comparative analyses to establish a cutoff point from which SPPB score there is a higher risk of death compared to the general population, especially comparative analyses of interventions to improve the physical performance of older adults and prevent death.
Implications: The results may subsidize the development of clinical protocols aimed at improving physical performance, to be used in public health regarding the health management of the elderly population.
Keywords: Aged, Mortality, Physical Functional Performance

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PREVALENCE AND FACTORS ASSOCIATED WITH JOINT PAIN IN INDIVIDUALS WITH CHIKUNGUNYA IN AN AMAZONIAN STATE: A CROSS-SECTIONAL STUDY

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Background: Chikungunya fever is a disease caused by the virus Chikungunya (VCHIK), and joint pain is considered the classic symptom. This viral infection tends to present with arthralgia and musculoskeletal dysfunction (MSD), which are associated with the progression of other clinical symptoms and sometimes disabling MSD manifestations. Since 2014, records of VCHIK have been identified in Brazil, with high rates of infection, thus raising concerns regarding states with favorable climates for the proliferation of the virus-transmitting mosquito. In the state of Amapá, there is a shortage of studies that reveal the profile of the infected population and their clinical and musculoskeletal manifestations, making it difficult to plan and execute preventive and disease management actions in the infected population.
Objectives: To identify the prevalence of musculoskeletal manifestations and analyze the association between joint pain and other MSD manifestations in individuals with Chikungunya fever in the state of Amapá, Brazil, between 2016 and 2021.
Methods: This is an observational, cross-sectional, and retrospective study which used data from the SINAN NET system of the Ministério da Saúde (MS) of Brazil. Sociodemographic and clinical data of diagnosed individuals were used. Data that were correctly filled out according to the identification and notification form of the MS were included in the study, while individuals with incomplete data were excluded. Descriptive and inferential statistical analyses were performed using the Chi-square test and linear regression to analyze possible associations.
Results: Data from 869 individuals were analyzed. The prevalence of arthralgia was 50.3%. The majority of cases were female (55.8%), with an average age of 31.9 $\pm$ 19.4 years, self- declared brown (77.5%), with incomplete elementary education (16.8%), and living in the urban area (82.8%). The results indicate a positive association between joint pain and Arthritis (OR=2.56; CI=1.90-3.46); Fever (OR=2.42; CI=1.27-4.60); Back pain (OR=4.34; CI=3.26- 5.80); Myalgias (OR=4.89; CI=3.43-6.98); and Headache (OR=3.69; CI=2.45-5.55).
Conclusion and Implications: This study indicates that the post-infection scenario of Chikungunya is broader and more complex than just joint pain symptoms. These data can help in planning quick and efficient strategies to address the physical dysfunctions arising from Chikungunya in a region of Brazil with favorable climatic conditions for this type of infection vector and deficient health infrastructure.
Keywords: Chikungunya fever, Joints, Musculoskeletal pain

Conflict of interest: The authors declare no conflict of interest.
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BIOPSYCHOSOCIAL EFFECTS AFTER PHOTOBIOMODULATION FOR GLYCEMIC CONTROL IN INDIVIDUALS WITH TYPE 2 DIABETES MELLITUS

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Background: Diabetes mellitus (DM) is a chronic disease characterized by hyperglycemia due to changes in the hormone insulin. The most common type is type 2(DM2), which has insulin resistance as one of its manifestations. Several metabolic changes affect these patients, including endothelial dysfunction and vascular and neurological disorders, as well as impact on quality of life, mental health, and sleep. Pharmacological therapy is one of the main interventions, associated with adaptations in the diet and physical activity routine. However, patients with DM2 do not adhere to treatment for various reasons and the disease continues its progression, burdening the entire health system and impacting the lives of this individual and his entire community. Photobiomodulation therapy (PBMT) appears as an alternative because it acts on energy metabolism, the side effects are negligible, and its non-invasive application can favor adherence. Several scientific studies have shown its effectiveness in glycemic control in an experimental model and the first studies with humans are beginning to emerge to consolidate this possibility.
Objectives: To verify the effects of PBMT by infrared LED on blood glucose levels and consequent impact on the biopsychosocial context of patients with DM2. Therefore, initial and final laboratory tests of fasting blood glucose, glycated hemoglobin, HOMA-IR index and application of quality of life and sleep questionnaires, perception of pain, sensitivity and mental health will be carried out.
Methods: Randomized, double-blind controlled trial with sham group. Sample space of 36 volunteers diagnosed with DM2, distributed in: sham (irradiation with zero parameters), panel (irradiation by the Joovv Elite system of the whole body) and blanket (irradiation with a flexible blanket prototype applied to the abdomen and bilaterally to the quadriceps femoris, hamstrings, triceps surae, arm and forearm). The volunteers underwent initial and final assessments consisting of laboratory tests (fasting blood glucose, glycated hemoglobin and HOMA-IR index) and questionnaires (Diabetes Quality of Life-Brazil-8, Neuropathic Pain Questionnaire 4, painDETECT, Sleep Quality Index of Pittsburgh, Depression, Anxiety and Stress Scale). Participants will be irradiated (active or not) every other day within a 12-day period.
Results, Conclusion, and Implications: As this is a study protocol, there are no results, conclusions, and implications to be presented.
Keywords: Photobiomodulation, Type 2 diabetes mellitus, biopsychosocial impact

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To Professor Dr. Guilherme Borges Pereira and MSc. Tatiana de Oliveira Passos de Araújo, from the FisioClinEx Laboratory, Department of Physiological Sciences at UFSCar.
Ethics committee approval: UFSCar ethical committee approval - number 5.833.875

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PREVALENCE AND ASSOCIATION OF VULVOVAGINAL SYMPTOMS WITH AGE GROUPS IN BRAZILIAN WOMEN: A CROSS-CROSS STUDY

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Background: Several studies have shown that perimenopausal, menopausal and postmenopausal women have a high prevalence of vulvovaginal symptoms, such as itching, burning, pain, irritation, dryness and vaginal odor. However, knowledge about such symptoms in the younger Brazilian public is scarce.
Objectives: To verify the prevalence of vulvovaginal symptoms and the association of these symptoms with the different age groups of Brazilian women.
Methods: This is a cross-sectional study with a quantitative approach, carried out between October 2021 and August 2022 with Brazilian women aged $\geq$ 18 years, literate, with internet access and who had an email account, recruited from the disclosure of the search on social networks. The study was developed based on the guidelines of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) initiative. To obtain the data, the participants answered a questionnaire via Google Forms that contained sociodemographic and health data and the Vulvovaginal Symptoms Questionnaire (VSQ) to screen for vulvovaginal symptoms. Data were analyzed descriptively using the chi-square test to verify the association between vulvovaginal symptoms and age groups using the SPSS program (version 26.0). Age-related data were categorized into 3 groups, 18 to 35 years old (n=168), 36 to 50 years old (n=45) and 51 to 79 years old (n=12) for analysis, adopting a significance level of 5%.
Results: The study included 225 women with a mean age of 28 years (minimum age 18 and maximum age 79 years), who had at least one vulvovaginal symptom according to the VSQ-Br. Regarding vulvovaginal symptoms in general, there was a prevalence of 55.1% behavior, 31.6% burning, 20.4% pain, 28% intercourse, 30.7% dryness, 64% discharge and 28% smell. As for the results by age group, the symptoms were more prevalent among women aged 18 to 35 years (itching 72.4%, burning 69%, pain 78.3%, protection 74.6%, dryness 60.9%, discharge 82, 6% and smell 69.8%). As for the associations between the variables (vulvovaginal symptoms and age groups), there was a significant association between dryness ($p<0.004$) and discharge ($p<0.001$) with the age group variable.
Conclusion: According to the presented results, young women may experience one or more vulvovaginal symptoms. As for the association of variables, there was an association between age and symptoms of discharge and dryness.
Implications: By presenting data by age group, it is possible to understand the prevalence of symptoms in the young public, in addition to directing possible interventions due to the identification of the most prevalent symptoms in this public. However, due to the characteristics of the participants, there is a limitation regarding the analyzes related to the elderly population.
Keywords: Women's Health, Prevalence, Signs and Symptoms

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: UFSCar Human Research Ethics Committee (CAAE: 27822120.7.0000.550).

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NEUROMUSCULAR FUNCTION IN PEOPLE WITH CHRONIC KIDNEY DISEASE ON HEMODIALYSIS INITIATION

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Background: The progression of chronic kidney disease (CKD) to its most advanced stage, which usually requires hemodialysis, causes

metabolic changes that can impact the neuromuscular system of this population. The difficulty of early detection of CKD often leads to late nephrological referral and initiation of hemodialysis on an emergency basis.
Objectives: To assess neuromuscular function in people with CKD starting hemodialysis.
Methods: Cross-sectional study, evaluating the neuromuscular function in people with CKD admitted to an urgent and emergency hospital who started hemodialysis on an emergency basis (CKD group) compared to people without kidney disease (control group). Measures of neuromuscular excitability (chronaxie obtained in the stimulus electrodiagnostic test), peripheral muscle strength (peak strength focused on lower limb isometric dynamometry) and functional capacity (number of repetitions in the 1-minute sit-to-stand test) were used. To compare the results between the groups, Student's t test was used for variables with normal distribution and the Mann-Whitney test for variables with non-normal distribution, adopting a rejection index of the null hypothesis ≤ 0.05.
Results: Twenty-eight participants, 14 without kidney disease (42 $\pm$ 12 years, 5 males and 9 females) and 14 in the CKD group (53 $\pm$ 18 years, 9 males and 5 females) were evaluated. The CKD group, compared to controls without kidney disease, showed impairment in neuromuscular excitability (vastus lateralis chronaxie: 654 $\pm$ 230 vs 415 $\pm$ 190 μs, p = 0.008; tibialis anterior chronaxie: 600 [500 - 1000] vs 400 [300 - 400] μs, p = 0.001), peripheral muscle strength in all muscles assessed (knee extensors: 12. 3 $\pm$ 4.6 vs 23.5 $\pm$ 9 kgf; knee flexors: 11.3 $\pm$ 3.2 vs 17.8 $\pm$ 4.3 kgf; dorsiflexors: 8.7 $\pm$ 2.8 vs 16.7 $\pm$ 4.3 kgf; and plantar flexors: 11.2 $\pm$ 2.5 vs 16.6 $\pm$ 4.4 kgf, all $p < 0.001$) and in functional capacity (13.8 $\pm$ 4.9 vs 36.7 $\pm$ 9.1 repetitions, $p < 0.001$).
Conclusion: People with advanced CKD who started hemodialysis on an emergency basis have impaired neuromuscular function, considering neuromuscular excitability, lower limb isometric muscle strength and functional capacity.
Implications: These findings may guide screening and monitoring strategies for neuromuscular deficiencies and rehabilitation planning.
Keywords: Kidney Failure, Chronic, Peripheral Nervous System Diseases, Debilidad Muscular

Conflict of interest: The authors declare no conflict of interest.
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PELVIC FLOOR DISCOMFORT AND GENITAL SELF-IMAGE IN WOMEN ATTENDING PRIMARY HEALTH CARE IN THE MUNICIPALITY OF CRICIÚMA/SC

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Background: There are several factors that lead to pelvic floor discomfort (PAD); these dysfunctions do not directly affect the lives of affected women but end up affecting female genital self-image.
Objective: The aim of the study is to relate the PAD and genital self-image in women assisted in primary health care in the city of Criciúma/SC.
Methods: This is a cross-sectional study with 212 adult women, aged 18 years or older, with self-reports of being sexually active in the last four weeks, registered in the health network of the city of Criciúma/SC. DAP were verified using the Pelvic Floor Distress Inventory (PFDI-20) and genital self-image was assessed using the Female Genital Self-Image Scale (FGSIS). The instruments were applied through individual interviews. A comparison of self-image between women with and without PAD was performed using the Spearman test for independent samples, according to data normality.
Results: Genital self-image correlated with all PAD (14.6%), with 12.5% of the variation in anorectal symptoms being explained by genital self-image.
Conclusion: Women with PAD worsen their genital self-image. The main results found were that the increase in DAP and the increase in anorectal symptoms decrease genital self-image.
Implications: The lack of national studies on this theme is highlighted, evidencing the importance of its realization.
Keywords: Pelvic Floor Discomfort, Genital self-image, Anorectal symptoms

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INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH COMPONENTS E CATEGORIES ASSESSED BY THE SPINAL CORD INDEPENDENCE MEASURE

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Background: The *Spinal Cord Independence Measure* (SCIM) was developed in 1997 to measure functional independence in individuals with spinal cord injury (SCI), embracing activities relevant to their daily life. Five versions of the SCIM have been published, respecting the construct delimitated before the International Classification of Functioning, Disability and Health (ICF) advent (2001). The ICF, by being capable of describing an individual's health, health estate and functioning through a biopsychosocial model, is highly relevant to the rehabilitation process.
Objectives: Identify ICF components and categories covered by different versions of the SCIM.
Methods: Each SCIM version's items were linked to an ICF code accordingly to Cieza et al. (2019) linking rules. Dada was descriptively analysed.
Results: The items of different SCIM versions' linkage to the ICF showed that all versions contemplate the Body structures, Body Functions and Activities and Participation ICF components. The instrument embraces Functions of the cardiovascular, hematological, immunological, and respiratory systems (b4), Functions of the digestive, metabolic, and endocrine systems (b5), Genitourinary and reproductive functions (b6), Mobility (d4) and Self-care (d5)

chapters. A few codes were added from one version to another, maintaining the original construct throughout updates.
Conclusion: The SCIM linkage to ICF showed that the aim of the assessment is the Activities and Participation component, contemplating 64% of the codes considered relevant in the literature for people with chronic SCI. The instrument briefly approaches the Body Structures and Body Functions components, reflecting 22% of this component's codes considered the most relevant for this population, showing that the assessment of this component might have to be complemented by other instruments. The SCIM IV is the most recent and the one linked to the highest number of ICF codes.
Implications: The ICF linkage to each SCIM version's items in association with the use of ICF qualifiers will help health professionals to elaborate reports for SCI patients, allowing the use of an international classification to describe functional independence and enabling communication between health professionals. Furthermore, by identifying the ICF components contemplated by SCIM versions, this paper helps health professionals plan the assessment of SCI individuals.
Keywords: Spinal Cord Injury, SCIM, ICF

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PHYSICAL ACTIVITY OF GYNECOLOGICAL CANCER SURVIVORS IN THE FIRST AND FOURTH QUARTER AFTER HIGH DOSE RATE BRACHYTHERAPY

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Background: Gynecological cancers develop in the female reproductive system and include cancer of the cervix, uterus, ovaries, fallopian tubes, vulva, and vagina. High dose rate brachytherapy (BATD) is often used in the treatment of gynecological malignancies, however, it can induce serious side effects of late onset, such as changes in the bowel, urinary tract/bladder and vagina. The practice of physical activity (PA) has positive results on the side effects of gynecological cancer and its treatment.
Objectives: To compare the level of PA in women who survived gynecological cancer in the first and fourth trimester after BATD at a reference oncology institution in southern Brazil.
Methods: Retrospective and longitudinal study based on electronic medical records of women with gynecological cancer treated at the physiotherapy outpatient clinic of the Oncological Research Center (CEPON) in Santa Catarina. The short version of the Physical Activity Questionnaire (IPAQ) was used to assess the level of PA. The collected information was stored in a spreadsheet in Microsoft the IBM SPSS program, version 20.0, was used for statistical analysis. Variables were analyzed descriptively using simple frequency and percentages (categorical variables) and measures of position and dispersion (numerical variables). The Kolmogorov-Smirnov test was performed to verify the normality of the data. To compare the variables related to PA according to the IPAQ (PA time - minutes per day; weekly frequency; sitting time) between the first trimester after radiotherapy and the fourth trimester, the Wilcoxon test was used, with the significance level adopted as 5%.
Results: 34 participants were included with a mean age of 53.4 ± 13.5 years. Most were classified as insufficiently active in both the first (55.9%) and fourth (64.7%) trimester after BATD. In addition, an increase in sedentary behavior was identified, with greater relevance in the fourth quarter, so that the average sitting time on a weekday was 147.4±102.4 minutes per day (min/day) in the first quarter to 211.8±125.7 min/day in the fourth quarter (p= 0.007); as well as the average sitting time on a weekend day, increased from 151±103.5 min/day on the first day to 228.5±133.3 min/day (p=0.002).
Conclusion: It was possible to notice that the majority of gynecological cancer survivors do not reach the PA recommendations in the first and fourth trimester after BATD. It was also found that women have sedentary behavior after treatment, especially in the fourth trimester after BATD, spending more time sitting compared to the first quarter.
Implications: The study demonstrates the importance of encouraging the practice of physical activity among survivors of gynecological cancer, especially in cancer treatment centers.
Keywords: Physical activity, Brachytherapy, Gynecological Cancer

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Oncological Research Committee (CEPON), under opinion number 3,215,586 (CAAE 80525317.4.0000.0118).

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PHYSIOTHERAPY APPLIED TO PATIENTS IN THE VARIOUS STAGES OF PARKINSON'S DISEASE - WITHOUT IDENTIFICATION

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Background: Cellular senescence is an irreversible state of cell cycle arrest, thus being characterized by decreased cell proliferation and increased nucleus area, often acting as a tumor suppressor program. Photobiomodulation (PBM) has been used in several conditions to increase the mitochondrial response, promoting nuclear changes and cell proliferation. However, the effects of PBM on cells are still unclear.
Objectives: To verify the efficacy of photobiomodulation on cell senescence processes.
Methods: We utilized A172 glioblastoma cells transduced with H2B-mCherry by lentivirus to nuclear tagging. Treatment was done with GaAlAs Laser (850nm). Cells were divided by intensity into the following groups: C= Control, L1= 1J/cm^2, L2= 2.2J/cm^2, L3= 3J/cm^2, L9= 9J/cm^2, L15= 15J/cm^2, L21= 21J/cm^2, nuclear evaluation was performed at experimental times (0h, 24h, 48h and 72h). For data analysis, two-way ANOVA with the Tukey post hoc test was used. Differences were significant when $p<0.05$.
Results: PBM on intensities of 1J/cm^2, 2.2J/cm^2, 3J/cm^2, 9J/cm^2 e 15J/cm^2 showed a lower increase at the nuclear size when

compared with time 0h and 72h in the control group. All intensities (1, 2.2, 3, 9, 15, and 21 J/cm^2) promoted cellular proliferation after 72 hours, while 15J/cm^2 presented an accentuated increase compared to groups L1, L2.2, and L3.
Conclusion: PBM enhanced cellular proliferation while causing a reduced nuclear increase in glioblastoma cells.
Implications: In this study, we found that the laser decreased the cellular senescence state from the evaluation of the morphological parameters, thus increasing cell proliferation and decreasing the nuclear area; therefore, it is an important therapeutic tool against the cellular aging process.
Keywords: Parkinson's, Physiotherapy, Treatment of diabetes mellitus

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: University for the development of Alto Vale do Itajaí - Unidavi, according to CAAE opinion number: 63508622.0.0000.5676.

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WORK ABILITY PREDICTS OCCUPATIONAL HEALTH-RELATED ABSENTEEISM IN PROFESSIONAL DRIVERS: A 1-YEAR LONGITUDINAL STUDY

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Background: Work ability (WA) is considered the result of the interaction of personal, social, and other factors related to the work environment. To what extent WA can predict absenteeism at work due to occupational health in professional drivers remains poorly investigated.
Objectives: To analyze the association between work ability and occupational health-related absenteeism at work in professional drivers.
Methods: From 2020 to 2021, 449 professional drivers were assessed for sociodemographic information, lifestyle (Baecke questionnaire, Work Stress Scale), and work ability (Work Ability Index, WAI) in Curitiba, Paraná (Brazil). Follow-up assessments were conducted at 6 and 12 months by telephone to answer 3 questions that aimed at information about professional performance, situations of occupational absenteeism, and accidents at work.
Results: After 12 months of the initial interview, 270/449 drivers (60%) remained as research participants and the others did not remain active in the profession (n=29/449, 7%) or did not respond to telephone contact (n= 53/449, 12%). WAI was inversely associated (β=-0.119 CI 95% -0.233 to -0.006, P=0.039) with general absenteeism at 12 months, explaining better WAI variability and showing a better fit of the latter model (AIC=137, R^2= 0.028, P=0.074 vs. R^2 = 0.050, AIC = 92, P=0.039). Separating the reasons for absenteeism between occupational health and accidents at work, we concluded that WAI was inversely associated with absenteeism due to occupational health at 6 months ((β=-0.096 CI95% -0.187 to -0.006, P=0.037) and accidents at work at 12 months (β=-0.189 95% CI -0.331 to -0.047, P=0.009).
Conclusion: Work ability can predict 1-year absenteeism due to occupational health in professional drivers.
Implications: Absenteeism due to occupational health can be detected using current work ability information in professional drivers. Further studies are required to test whether ergonomic interventions can promote occupational health and decrease absenteeism in this population.
Keywords: Professional drivers, Ability to work, Occupational health

Conflict of interest: The authors declare no conflict of interest.
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CARACTERIZATION OF MANUAL PREFERENCE IN CORPUS CALLOSUM DYSGENESIS

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Background: Corpus callosum dysgenesis (CCD) is a neurodevelopmental malformation characterized by the total or partial absence or hypoplasia of the corpus callosum (CC); the structure responsible for connecting both cerebral hemispheres. CCD is associated with cognitive, social, visual, auditory, motor, somatosensory and language alterations. Considering that CC seems to play an important role in the establishment of cerebral asymmetries, whether DCC patients have an indeterminate or strong handedness is an open question we addressed here.
Objectives: This study aimed at investigating the influence of CCD on manual preference.
Methods: An observational study with nine DCC patients were recruited from the Instituto D'Or de Pesquisa e Ensino (Rio de Janeiro, Brazil). The Edinburgh Handedness Inventory was used to assess manual preference. The inventory has 10 items: writing, drawing, throwing, scissors, toothbrush, knife, spoom, broom, match and open a box. The laterality quotient (LQ) was applied as follows: LQ = [(R-L) / (R+L) X 100], ranging from -100 (strong left-handedness) to +100 (strong right-handedness). The statistical analysis involves data description by means of number (%) of occurrences or mean ($\pm$standard deviation).
Results: Regarding the clinical characteristics of the sample, two types of CCD were identified: Total Agenesis (N = 6, 66.3%) and CC Hypoplasia (N = 3, 33%). Furthermore, the results showed that the type of CDD was isolated (Total Agenesis: N = 4, 44.4%; CC Hypoplasia: N = 2, 22.2%) or associated with other nervous system conditions (Total Agenesis: N = 1, 11.1%; CC Hypoplasia: N = 1, 11.1%). For manual preference, all subjects obtained the maximum score of the assessment instrument (strong left-handedness: N = 3, 33.3%; strong right-handedness: N = 6, 66.6%).
Conclusion: These results indicate that patients have a strong manual preference, regardless of the type of CDD and associations with nervous system conditions.
Implications: These findings can advance knowledge in the clinical condition of CCD and, consequently, influence the treatment and further research.
Keywords: Manual preference, Corpus Callosum, Dysgenesis of the corpus callosum

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: (IDOR, CAAE - 44421415.2.000. 5249)

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THE TREATMENT OF NON-ALCOHOLIC FATTY LIVER DISEASE THROUGH PHYSIOTHERAPY REHABILITATION

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Background: One focus of non-alcoholic fatty liver disease (NAFLD) treatment is physical exercise. Resistance training (ET) has become a viable option for initial physical activity for patients with NAFLD, due to the low cardiorespiratory fitness and sedentary lifestyle found in most of these patients. The physiotherapist, on the other hand, has the competence to rehabilitate individuals who have intercurrent functional kinetic disorders in organs and systems of the human body, generated by genetic alterations, trauma and acquired diseases. Considering that the association between NAFLD and physiotherapeutic rehabilitation is in constant development, clear definitions and more research are needed to help improve the understanding of the subject. Therefore, considering the growing number of individuals affected by NAFLD and the need to provide practical data to help prevent and control this pathology, it was important to carry out a systematic review on the subject, since this could lead to interventions additional and potential therapies in the management of individuals diagnosed with NAFLD.
Objective: To analyze the effect of physiotherapeutic rehabilitation, through resistance training on the clinical markers of individuals diagnosed with NAFLD.
Methods: It is a Systematic Review study with Randomized Clinical Trials (RCTs), formatted in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Statement (PRISMA Statement) and registered in PROSPERO27 N° CRD4202236638. Searches were carried out in Medline (accessed by PubMed), Lilacs, Embase, Cochrane, and Scielo databases, in addition to manual searches, from January/2011 to December/2022. Studies with individuals who were not diagnosed with NAFLD through imaging or biopsy were excluded. The ROB 2.0(30) tool was used to assess the risk of bias in the eligible studies. A summary guide without meta-analysis (SWiM) was applied for data analysis and outcomes.
Results: A total of six studies were included, totaling 232 adult participants diagnosed with NAFLD. Hepatic fat (GH) showed a significant reduction ($p \leq 0.05$) when comparing the beginning and end of the intervention, in the groups that were only submitted to resistance training. Already, the resistance training groups associated with dietary intervention, showed a reduction in GH (11.8%) between the beginning and end of the intervention, as well as a relative reduction of 212.6% (95% CI) of GH, in the same period. The groups that used the resistance training protocol showed improvement in insulin sensitivity and insulin resistance (IR) in the comparison between the initial and final period of the intervention.
Conclusion: The resistance training protocol can play an important role in physical therapy rehabilitation in individuals with NAFLD, as it reduces liver fat and improves insulin sensitivity and resistance in these individuals. Furthermore, it is possible to consider that the practice of resistance training is an easily accepted and consistent option for individuals with NAFLD, even when there is dietary intervention.
Implications: The articles in this systematic review showed heterogeneity in the intervention protocols and in the diagnostic criteria and outcomes of NAFLD, therefore, these points were observed as limiting aspects for this study.
Keywords: Nafld, Physiotherapy Rehabilitation, Strength Training

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Not applicable.

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PROFILE OF SLEEP PARAMETERS AND LEVEL OF PHYSICAL ACTIVITY OF PATIENTS POST-COVID-1

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Background: The COVID-19 pandemic has had cardiorespiratory, musculoskeletal and life habits repercussions, such as sleep and physical activity, both in the acute phase and after the disease. Thus, it is important to identify these changes in these patients to structure prevention and rehabilitation measures in clinical practice.
Objective: To profile sleep parameters and physical activity level in post-COVID-19 patients.
Method: This is a cross-sectional study, carried out from November 2022 to March 2023, at the Cardiopulmonary Rehabilitation Laboratory of the Physiotherapy Department of the Federal University of Pernambuco. Patients aged 18 and over, of both sexes, with a diagnosis of COVID-19 confirmed through a positive result in molecular and serological tests between 3-12 months of diagnosis were included. And excluded, patients who make use of sleep-inducing medication, who have cardiometabolic diseases such as grade III obesity, as well as decompensated chronic degenerative diseases, neuromuscular or some cognitive impairment that makes it difficult to understand how the evaluations will be carried out and who have osteopathies -joints that make it impossible to perform during the physical assessment protocol. Sleep efficiency, total sleep time, number of awakenings and sleep latency were evaluated using actigraphy and the Pittsburg Sleep Quality Index (PSQI), in addition to sleep quality. The level of physical activity was also assessed using the International Physical Activity Questionnaire - IPAQ. The descriptive analysis of the data was presented as mean and standard deviation.
Results: Eighteen patients were selected, predominantly female (74.3%), aged 46.4 $\pm$ 12.9 years. On the actigraphy data, a total sleep time of 8.0 $\pm$ 5.6 hours was verified, the sleep efficiency was 75.3 $\pm$ 10.0%, the number of awakenings was 7.5 $\pm$ 4, 9 times and a sleep latency of 4.5 $\pm$ 2.9 minutes. The PSQI showed poor sleep quality with an average of 6.4 $\pm$ 3.2 points. In addition, a total sleep time of 9 $\pm$ 4.6 hours, sleep efficiency of 68.3 $\pm$ 7.6%, number of awakenings of 4.2 $\pm$ 2.8 times and sleep latency of 6 .5 $\pm$ 2.8 minutes. Regarding the level of physical activity, it was observed that 50.3% of the sample was insufficiently active, 23.4% active and 26.3% sedentary.

Conclusion: The results showed poor sleep quality by PSQI, moderate sleep efficiency, lower sleep latency and good total sleep time. Regarding the level of physical activity, it was demonstrated that most of these patients were insufficiently active.
Implications: Identifying these changes in these patients will imply the structuring of measures to prevent further complications of the disease and rehabilitation of these repercussions in clinical practice.
Keywords: COVID-19, Sleep parameters, Level of Physical Activity

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Ethics committee approval: Ethics and Research Committee of the Federal University of Pernambuco CAEE: 59828622.0.0000.5208 Notion of number: 5.536.992.

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CAN MUSCLE POWER TRAINING AID THE BIOMECHANICAL AND PHYSIOLOGICAL ADAPTATIONS IN ENDURANCE RUNNERS?

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Background: The performance of long-distance runners is predicted by the interaction between physical variables, and plyometric and endurance training can change the interaction between these variables. In this way, it becomes necessary to investigate these promoted adaptations and how their transfer to performance occurs.
Objectives: The study aimed to verify the combined effect of plyometric and endurance training on performance variables in long-distance runners.
Methods: The sample consisted of 23 male runners between 18 and 50 years old, athletes of 10km races and divided into two experimental groups: combined training (CT; Plyometric + endurance training; n = 11) and isolated training (ET; endurance training only; n = 12). The volunteers were submitted to two moments of evaluation, performed before and after the experimental protocol, consisting of anthropometric evaluations, muscle power, running economy, biomechanical test, maximum progressive test, and 10-km performance. For the experimental protocol, the volunteers were divided into pairs into the ET or CT groups according to the result obtained in the 10-kilometer test performed before the start of training. At the end of the experimental protocol (8 weeks), the athletes were reassessed, and the tests used were the same as those used in the initial assessment.
Results: In muscle power tests, a significant increase in jumps (CMJ and SJ) was reported at the end of training, regardless of the evaluated group. In the biomechanical variables, an increase in contact time with the ground and vertical oscillation was found, in addition to a decrease in stride frequency and leg stiffness at the end of the training protocol, in both analyzed groups. Regarding the physiological variables, an increase in running economy, respiratory compensation points and peak velocity on treadmill was found, but VO_2max remained stable after the experimental protocol. Finally, the final performance in the 10km did not show a significant effect, but the race strategy (initial phase) and peak velocity increased in both groups.
Conclusion: CT (endurance + plyometrics) elicited similar changes in muscle power, biomechanical, physiological and performance variables, when compared to runners who performed ET.
Implications: Even with the lowest volume of running in the CT group, the effects were similar to the group that only performed ET, a relevant finding when considering that a high volume of running training can lead to injuries due to stress or repetition. Based on our findings, it is recommended to include neuromuscular training in weekly training routines, with the insertion of activities aimed at improving contact with the ground, technical efficiency and energy use of the muscle stretching-shortening cycle. It is also suggested that the neuromuscular training load is established according to the periodization and is frequently controlled from the optimal height of the vertical jump. Finally, plyometric activities should be included in specific periods of the training routine, in which the main objective is to improve muscular power.
Keywords: Sport, Strength training, Runners, Performance

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Acknowledgment: Not applicable.
Ethics committee approval: Universidade Federal do Paraná (UFPR). (02487418.8.0000.0102).

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WORK-RELATED INJURIES AND PHYSIOTHERAPIES: A BIBLIOMETRIC ANALYSIS

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Background: Every year, millions of workers are affected by repetitive strain injury (RSI) and work-related musculoskeletal disorders (WMSDs), which affect muscles, nerves, ligaments, and tendons due to repetitive strain and overuse. Through bibliometric analysis on RSI/WMSD, it is possible to identify knowledge gaps, expanding areas of research, and emerging trends that may guide future studies and contribute to the advancement of the field.
Objective: Conduct a bibliometric analysis of primary studies on RSI/WMSDs at work and physiotherapies.
Methods: The Boolean search strategy ("Occupational Repetitive Strain Injuries" OR "Work-related Musculoskeletal Disorders" OR "WMSDs" OR "work-related injuries" OR "Occupational injuries" OR "Repetitive Strain Injury" AND “Physio therapy” OR “Physiotherapy”) was performed in March and May 2023 in the Web of Science and Scopus databases, applying a filter for original articles. The records were saved in Plain Text and BibiTeX format and analyzed in R (version 4.2.2) using the "bibliometrix" package (version 4.1.2).
Results: We identified 4.543 articles in the Web of Science and 634 articles in Scopus, with a total of 12.041 authors involved, published between 1952 and 2023. The growth rate was 6,53% per year, with an exponential increase from 1994 onward. The studies were published in 1093 scientific journals, with *American Journal of Industrial Medicine* magazine standing out (n = 368). Barbara Silverstein, from the University of Michigan, EUA, had the highest number of publications (n=37), being recognized as a reference in the areas of worker health and work safety. The article entitled "*Comparison of Selfreport Video Observation and Direct Measurement Methods for Upper Extremity Musculoskeletal Disorder Physical Risk Factors*" by Silverstein et al. (2001) had the highest number of citations (n = 213). The study compared three methods of assessing exposure

to risk factors for work-related musculoskeletal disorders and found that direct measurement by electromyography was more accurate than video analysis and self-report questionnaires. The co-occurrence network analysis of the authors' keywords resulted in the formation of 2 clusters, with emphasis on the themes of workers' compensation ("*injury*", "*work-related injury*", "*prevention*") and occupational injuries ("work-related musculoskeletal disorders", "*ergonomics*", "*physical therapy*").
Conclusion: Bibliometric analysis of primary studies on RSI/WMSDs at work revealed a marked increase in the number of publications in 1994, evidencing the growing interest related to worker safety and health. This growth in scientific production highlights the importance of research in this field and highlights the relevance of the topic in the academic and professional community.
Implications: Evidence-based bibliometric indicators can guide researchers and health professionals in identifying gaps and more influential themes on comprehensive preventive and physiotherapeutic measures in all aspects of the work environment, aiming to reduce the number of workers affected and away from their work activities.
Keywords: RSI/WMSD, Occupational Health, Bibliometric Analysis

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ANALYSIS OF THE OCCURRENCE OF FALLS, PAIN, MENTAL HEALTH, AND LEVEL OF PHYSICAL ACTIVITY OF ELDERLY PEOPLE DURING THE COVID-19 PANDEMIC

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Background: During the pandemic caused by Coronavírus, the main strategy to avoid contamination was the lockdown, especially for the elderly population, in which the restriction of physical and social activities may have negatively influenced issues related to mobility and balance, leaving them more susceptible to the occurrence of falls, pain, and the occurrence of mental disorders.
Objectives: To analyze the occurrence of falls, pain, mental health, and level of physical activity of the elderly in times of the COVID-19 pandemic.
Methods: A cross-sectional, descriptive, and quantitative study. The sample of this study consisted of 195 individuals aged 60 years or older, of both sexes, who answered an online questionnaire that contained self-reported information about the history of falls in the last 12 months: contamination by COVID-19. The pain was analyzed using the Analog Pain Scale (VAS), mental health using the Geriatric Depression Scale (GDS), and the level of physical activity was measured using the International Physical Activity Questionnaire (IPAQ). Data were analyzed descriptively in *Statistical Package for the Social Sciences (*SPSS), and reported in absolute and relative frequency, and mean and standard deviation.
Results: Most of the sample consisted of female elderly (71.3%), with a mean age of 70.89(+7.63) years. About a third of the sample (32.8%) reported having suffered at least one fall in the last 12 months, and 21.5% reported having contracted COVID-19 during the pandemic. As for pain, 69.2% reported feeling some kind of pain, and when asked about the intensity of pain, 43.6% reported feeling moderate pain and 13.3% reported feeling severe pain. When analyzing mental health through the GDS, 28.2% of the elderly had possible depressive symptoms, and regarding the level of physical activity, according to the IPAQ, it was observed that 50.3% of the elderly were active or very active, 29.2% were irregularly active and 20.5% were classified as sedentary.
Conclusion: The findings of the present study showed that one third of the sample, predominantly female, reported episodes of falls during the pandemic period, as well as the majority performing some physical activity. Furthermore, it is possible that social isolation, as a strategy for coping with the pandemic, had a negative impact on the mental health of the elderly.
Implications: The pandemic period had a negative impact on the physical and mental health of the population, mainly due to the need for social isolation. Despite its undeniable importance for the control and prevention of COVID-19, it is possible that today's mental health needs will continue well beyond the coronavirus outbreak itself. As we come out of the COVID-19 pandemic and the public health emergency comes to an end, it will be important to consider developing a comprehensive rehabilitation approach based on helping people cope with the aftermath of the pandemic in order to reduce the impact. of COVID-19 on physical and mental health.
Keywords: Fall Accidents, Coronavirus infections, Elderly

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EVALUATION OF FUNCTIONAL CAPACITY AND SARCOPENIA IN ADULT WOMEN WITH AND WITHOUT FIBROMYALGIA

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Background: Fibromyalgia is a chronic condition of unknown cause, characterized by widespread pain sensitivity and fatigue. After the updates in the criteria for the diagnosis of sarcopenia, carried out by the European Working Group on Sarcopenia in the Elderly (EWGSOP2), muscle strength reduction has become the main parameter for investigating this condition. In this context, there is a lack of information in the literature about the occurrence of sarcopenia in women with fibromyalgia, considering this new criterion.
Objectives: To evaluate and compare functional capacity and occurrence of sarcopenia in adult women with and without fibromyalgia.
Methods: This is a cross-sectional study carried out at the Integrated School Clinic of the Integrated Institute of Health of the Federal University of Mato Grosso do Sul (CEI/INISA/UFMS). The sample was composed by 38 women aged between 20 and 50 years (with index body mass (BMI) $<30 kg/m^2$, non-pregnant or puerperal women, non-menopausal and without the presence of another rheumatological condition), divided into two groups, fibromyalgia (GF; n=19) and control (GC; n=19), and matched by age. All participants were evaluated for muscle strength using the five-repetition Sitting

and Standing Test (5STS), appendicular muscle mass using bioimpedance analysis (BIA), and physical performance using the Timed Up and Go Test (TUG Test). Subsequently, the participants were evaluated for the presence and degree of sarcopenia (pre-sarcopenia, sarcopenia, severe sarcopenia), following the criteria and cutoff points for muscle strength, muscle mass, and physical performance proposed by the EWGSOP2. Statistical analysis: Student's *t*-test for independent samples and Chi-square test, significance level of 5%.
Results: Women with fibromyalgia had worse results for 5STS (GF 16.7±5.5; GC 10.3±3 s, $p<0.001$) and TUG TEST (GF 8.7±2.4; GC 6.3±0.6 s, $p<0.001$) compared to healthy women. There was no statistical difference between groups regarding appendicular skeletal muscle mass (GF 22.9±2.8; GC 22.9±2.6 kg/m2, $p=0.981$). Pre-sarcopenia occurrence was higher in GF than in GC (GF 57.9%; GC 5.3%, $p<0.001$). There was no occurrence of sarcopenia and severe sarcopenia in either group.
Conclusion: The occurrence of pre-sarcopenia is higher in adult women with fibromyalgia when compared to women without fibromyalgia. In addition, women with fibromyalgia have lower muscle strength and worse physical performance than women without fibromyalgia, but without a reduction in muscle mass.
Implications: It is important to monitor muscle function (muscle strength and physical performance) in individuals with fibromyalgia, even in the absence of muscle mass reduction, to develop health intervention strategies that attenuate or prevent sarcopenia.
Keywords: Sarcopenia, Chronic pain, Fibromyalgia

Conflict of interest: The authors declare no conflict of interest.

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Ethics committee approval: Federal University of Mato Grosso do Sul (UFMS). CEP/UFMS Approval Opinion N°. 5.265.046

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MULTICOMPONENT TRAINING ASSOCIATED WITH WHOLE BODY VIBRATION: EFFECT ON FUNCTIONAL CAPACITY AND QUALITY OF LIFE IN ELDERLY WOMEN WITH OSTEOPOROSIS

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Background: Aging is associated with functional decline and increased risk of contracting diseases. Osteoporosis (OP), a systemic disease, causes deterioration in bone microarchitecture and an increased propensity for fractures. Functional decline in the elderly is linked to decreased physical fitness, balance changes, increased risk of falls and impaired quality of life. Multicomponent Training (MCT) associated with Whole Body Vibration (WBV) brings functional benefits to the health of the elderly, as it is able to improve balance, muscle strength, functional capacity and reduce the risk of falls.
Objectives: To verify the effect of MCT associated with WBV on functional capacity and quality of life in osteoporotic elderly women.
Methods: Case study approved by CEP/CCS/UFPE, position n°: 3.608.668. During the intervention, the volunteer underwent 3 reassessments (after the 8th, 16th and 24th session). To measure the functional capacity, the distances covered in meters in the 6-Minute Walk Test (6MWT) were considered and the evaluation of the quality of life was made through the results expressed in the WHOQOL-OLD questionnaire. The interventions lasted for 8 consecutive weeks, three times a week, totaling 24 sessions. MCT lasted 45 minutes, consisting of 3 stations: cardiorespiratory/aerobic resistance; strength/endurance and flexibility; body balance/stability, respectively. The WBV was performed on a side-to-side oscillating vibrating platform, with progressive frequency incremental increase up to 30 Hz and oscillation amplitude of 2 mm peak to peak, duration of 60 seconds and rest of 10 to 30 seconds. Statistical analysis was carried out descriptively with data summarization before and after the 8 interventions, calculating the percentage differences between the predicted values, the frequencies of cut-off points achieved and the percentage increase in gain or loss, being represented numerically or graphically.
Results: Through the distance covered in the 6MWT, a variation from 521m to 564m in the last reassessment was verified. As for quality of life, the score ranged from 61.46% to 85.42% in the last reassessment.
Conclusion: The study showed significant effects on the functional capacity and quality of life of the evaluated elderly women. However, it is still not possible to state that the proposed protocol promotes greater benefits to the observed population in general.
Implications: Faced with the scarcity of protocols that prescribe MCT training associated with a vibrating platform in osteoporotic elderly women with risk of falls, the importance of proceeding with the proposed method was perceived in order to identify alternatives to guarantee functional capacity and quality of life in this population.
Keywords: Multicomponent Training, Whole Body Vibration, Osteoporosis

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LEVEL OF SELF-DETERMINATION AND SELF-EFFICIENCY IN PATIENTS HOSPITALIZED FOR COPD EXACERBATION: PRELIMINARY ANALYSIS

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Background: Chronic obstructive pulmonary disease (COPD) is characterized by a persistent respiratory disorder due to airflow limitation. COPD is considered a debilitating disease in which the symptomatology and muscle and functional damage affect the performance of physical activity and the quality of life of individuals. In these, periods of exacerbation of the disease can be frequent, with increased symptoms and even the need for hospitalization, which accentuates physical deconditioning, loss of strength and muscle mass. In this context, rehabilitation strategies should be designed and knowing the level of self-determination and symptomatology after COPD exacerbation can be useful for clinical decision.
Objectives: The objective of the study was to evaluate the existence of a correlation between self-determination, self-efficacy for physical activity and symptomatology in patients hospitalized for COPD exacerbation.
Methods: This is a cross-sectional study. Nine individuals hospitalized for COPD exacerbation were evaluated. At the time of pre-hospital discharge, they were asked about self-determination (Behavioral Regulation in Exercise - Questionnaire 2 [BREQ-2]), self-efficacy (The COPD Self-Efficacy Scale) and symptomatology (COPD Assessment Test™ [CAT] and Medical Research Council [mMRC

dyspnoea]). The BREQ-2 questionnaire was scored by domains (amotivation, introjected regulation, identified regulation, external regulation, and intrinsic motivation) and relative autonomic index, The COPD Self-Efficacy Scale was also scored by domains (negative effects, intense emotional arousal, physical exertion, time/environment, and behavioral risk factors).
Results: The sample consisted of nine patients, 5 (55.6%) males and 4 (44.4%) females, aged 67±9 years old and hospital stay of 7.44± 5 days. A positive correlation was found between the physical exertion domain of The COPD Self-Efficacy Scale and the relative autonomic index and introjected regulation of BREQ-2 ($r= 0.83$; $p<0.01$/ $r= 0.86$; $p< 0.01$, respectively). Furthermore, a negative correlation was found between the CAT and the BREQ-2 amotivation domain ($r= -0.80$; $p<0.01$) and a positive correlation between the mMRC and the BREQ-2 external regulation domain ($r=0.64$; $p=0.05$).
Conclusion: In patients hospitalized for COPD exacerbation, there is an association between the motivational level to perform physical activity and COPD symptomatology. The greater symptomatology was associated with greater external regulation for performing physical activity, as well as being more self-determined for the practice of physical activity and with more self-efficacy for managing dyspnea when performing physical exertion.
Implications: These results, even if determined by external reward, demonstrate susceptibility to changes in behavior related to the practice of physical activity.
Keywords: Motivation, Physical exercise, Respiratory diseases

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Ethics committee approval: UFSCar Research Ethics Committee (CAAE: 51088115.3.0000.5504) and Santa Casa of São Carlos (CAAE: 55143521.0.3001.8148).

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BARRIERS AND DRIVES OF TO THE PARTICIPATION OF CHILDREN AND YOUNG ADULTS WITH DOWN SYNDROME: A SYSTEMATIC REVIEW

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Background: Participation promotes the development of skills, competences, peer interaction and greater independence, thus contributing to the growth and development of children and young people. Despite the numerous benefits related to participation, children and young people with Down Syndrome participate less when compared to their typically developing peers. So far, the literature does not have comprehensive systematic reviews that investigate the barriers and facilitators for the participation of individuals with Down Syndrome.
Objective: This paper aims to identify barriers and facilitators for the participation of children, adolescents, and young adults with Down Syndrome.
Methods: A systematic review was conducted following the Preferred reporting items of Systematic Reviews and Meta Analysis Guide — PRISMA and with protocol registered at the International Prospective Register of Systematic Reviews - PROSPERO (number: CRD42022302556). A deeply literature review using PubMed, Embase, Web of Science, PsyINFO , and Scielo electronic databases , with no date restriction. Original studies, published in peer-reviewed journals, written in any language, were included if they examined perceived barriers and or drivers of to participation by children, adolescents, and young adults with Down Syndrome. The methodological quality of the studies was assessed by McMaster Critical Review Forms for qualitative and quantitative studies.
Results: Ten studies, eight qualitative and two quantitative, involving 206 participants, were included in the review. Of these, seven studies scored above 70% on the McMaster Scale, indicating good methodological quality. The physical characteristics of individuals with Down Syndrome (eg, hypotonia) were identified personal barriers to participation. Social barriers frequently addressed in studies were associated with family attitudes, social interaction, and financial resources. The lack of professionals and specialized activities were the most commonly reported political barriers, while the lack of accessibility and transportation were identified as environmental barriers. Personal enablers for participation in Down Syndrome were pleasure, individual skills, motivation, and fun. Factors such as the attitude of families, friends and social interaction appeared as social facilitators for participation. The availability of specialized professionals to carry out activities, as well as specific activities for people with Down Syndrome, were considered important political drivers of. None of the studies reported environmental facilitators.
Conclusion: There are personal, social, political, and environmental barriers and facilitators that determine participation in Down Syndrome.
Implications: The findings of this review show that the factors for children, adolescents and Young people with Down Syndrome to have lived participation are diverse and complex. The results obtained in this study make the professionals know and understand these factors in order to minimize the barriers and enhance the drivers of more effectively, improving their clinical practice and helping to raise awareness about the impacts of these aspects on the lives of people with disabilities.
Keywords: Participation, Down's syndrome, Barriers, Drivers of

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LOW BACK PAIN TREATMENT STRATEGIES IN PRIMARY CARE AND USER SATISFACTION: CROSS-SECTIONAL STUDY OF USER PERSPECTIVES

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Background: Limited access to evidence-based information and ineffective treatment modalities, especially in low- and middle-income countries, may contribute to the increase in years lived with disability associated with low back pain. Added to this, early referral to more complex levels of care increases waste and hinders this population's equitable access to health services.

Objective: To describe low back pain treatment strategies in primary care from the user's perspective and their satisfaction with the treatment.
Methods: This is a cross-sectional and descriptive study. A structured interview was carried out with consumers with low back pain in primary health care, from February to April 2023 in six Health Units in Fortaleza/Brazil. The study followed ethical criteria. Data about pain intensity (Numerical Rating Scale - NRS) and disability (Roland Morris Disability Questionnaire - RMDQ) in the last month were collected. Information about low back pain treatment strategies by the primary care health professional, including pharmacological and non-pharmacological treatment, and consumer satisfaction with the treatment and the reasons were investigated.
Results: Fifteen consumers with a mean age of 54 (±10) years participated, most of them female (86%) and who reported feeling pain for more than 3 months (100%). These consumers had 16 (±5) points on the RMDQ, and 8 (±1) points on the NRS in the last month. In total, 86% of consumers were advised to use analgesic, anti-inflammatory and/or muscle relaxant medication, 66% to perform therapeutic exercises; 53% were referred for imaging, 46% were referred for physiotherapy; 26.7% were referred to a specialist physician, 13.3% received health education, and 6.7% were referred for surgery. Only 46% of consumers reported satisfaction with the treatment, listing the friendliness of the professional, prescription of medication and imaging tests as the main factors. The absence of a pain solution and medication prescription, in addition to the quality of professional care, were the main reasons for consumers' dissatisfaction.
Conclusion: Most treatment strategies proposed by primary care health professionals are not in accordance with guidelines for low back pain management. Most consumers reported that the treatment was not effective, and this contributed to dissatisfaction.
Implications: Strategies that bring primary care professionals and consumers with low back pain closer to evidence-based low back pain management recommendations can help in a more effective treatment that promotes consumer satisfaction.
Keywords: Low Back Pain, Primary Health Care, Evidence-Based Practice

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ROTATOR CUFF ISOMETRIC EXERCISES, SCAPULAR MUSCLE STRENGTHENING AND STRETCHING IN INDIVIDUALS WITH ROTATOR CUFF TENDINOPATHY: A MULTIPLE-SUBJECT CASE REPORT

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Background: Rotator cuff tendinopathy (RC) is a common disorder of the shoulder and may be related to intrinsic and extrinsic factors. Extrinsic factors can be changes in scapular and glenohumeral kinematics that contribute to internal and external impact. Treatment through resistance exercises has been an excellent alternative for this disorder, and isometric exercises have been widely studied for the treatment of tendinopathies of the lower limbs. However, in MR tendinopathies, isometric exercises still need to be better clarified.
Objectives: To evaluate the effects of a rehabilitation protocol of RC isometric exercises along with traditional shoulder exercises on patient-self-reported pain and function, muscle strength, and electromyographic activity in individuals with RC tendinopathy.
Methods: Eleven individuals (8 women and 3 men, 37.9±5.6 years) with RC tendinopathy performed isometric MR exercises in combination with stretching and strengthening of the scapular muscles for 6 weeks. The effects of the treatment were evaluated through pain and shoulder function self-reported by the patient, isometric muscle strength, electromyographic activity during arm elevation and internal and external shoulder rotation, and pain during arm elevation. The evaluations were performed before and at the end of the first session and after 6 weeks of intervention.
Results: There was improvement in shoulder pain and function, increased isometric muscle strength for arm elevation and internal rotation, increased infraspinal and serratus anterior muscle activity, and reduced pain during arm elevation after 6 weeks of intervention.
Conclusion: This case report showed improvement in pain and function, increased shoulder isometric strength and electromyographic activity of the serratus anterior and infraspinal muscles, as well as decreased pain during arm elevation, after a 6-week intervention of RC isometric exercises associated with stretching and strengthening of scapular muscles in patients with RC tendinopathy.
Implications: This case report indicates that a protocol of RC isometric exercises in combination with stretching and strengthening of the scapular muscles may improve pain during arm elevation and shoulder isometric strength, as well as the EMG function and activity of the infraspinal and serratus anterior muscles in individuals with RC tendinopathy. no effects observed immediately after the intervention.
Keywords: Case Report, Exercise therapy, Pain management

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Authors are grateful to all the volunteers who contributed to this study.
Ethics committee approval: Ethics and Research Committee of the Federal University of Rio Grande do Norte — Opinion 3,434,684.

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PUBLICATION RATE OF ABSTRACTS ON PULMONARY REHABILITATION PRESENTED AT THE ERS CONGRESS AND ATS INTERNATIONAL CONFERENCE

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Background: The results of research projects have been disseminated more as abstracts at conferences than as articles in scientific journals. However, conference abstracts are aimed at scientific dissemination and peer feedback so that the manuscript can be refined and published in qualified scientific journals.
Objectives: To evaluate the publication rate of scientific abstracts presented within the scope of pulmonary rehabilitation at the European Respiratory Society International Congress (ERSc) and American Thoracic Society International Conference (ATSc).
Methods: Abstract searches were carried out in the electronic annals of these 2016 to 2018 conferences. The identified abstracts were categorized by type of presentation. The number of authors and country of origin of the corresponding author were recorded. The publication rate after three to five years of abstract submission was analyzed. After sorting the abstracts, the articles were searched in the Google Scholar and Medline databases. When the article was not found, three e-mails were sent to the authors to identify the publication status. When the article was not found and no response was obtained from the author, it was classified as "uncertain publication". Abstracts published as articles had the following data extracted: journal name, impact factor (IF), study design, affiliation, and whether the result was statistically significant or in a positive direction from their primary outcome analysis. Descriptive analyzes were performed, with categorical data presented as frequency and/or percentage and continuous data as median (interqualitical range).
Results: A total of 964 potentially eligible abstracts were identified, of which 20.7% were excluded. 764 abstracts were analyzed, most of which were thematic posters (54.8%), followed by poster discussions (36.1%) and oral presentations (9.0%). The average number of authors was 6, and most were from the USA (18.7%). At the ERSc, the UK had the highest number of submissions (16.4%) while the US had the highest number at the ATSc. The authors responded to e-mails about the publication in 41.9% of the contacts. In 322 (42%) abstracts, no journal article related to the study was found and no response from the author was obtained. A total of 323 published articles related to pulmonary rehabilitation abstracts were found, resulting in a publication rate of 42.3%. Categorization by proportional mode of presentation showed that 66.7% of oral presentations, 46.4% of poster discussions and 35.5% of thematic posters were published as articles. The median IF of the journals was 3.4(2.6−6.4). Significant and positive results were reported in 78.4% of the identified articles.
Conclusion: Over half of the abstracts on pulmonary rehabilitation presented at the ERSc and ATSc between 2016 and 2018 remain unpublished.
Implications: This observation supports the idea of potential publication bias in the wider literature. The low publication rate may be due to the difficulty in obtaining funding for research, the lack of resources for authors to develop their research and the difficulty for authors to find a suitable journal to publish their work. Incentive strategies are needed to improve the conversion of submitted abstracts into journal articles.
Keywords: Pulmonary rehabilitation, Gray literature, Publication rate

Conflict of interest: The authors declare no conflict of interest.
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QUALITY OF LIFE OF CAREGIVERS OF CHILDREN AND ADOLESCENTS WITH CANCER

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Background: Children and adolescents with cancer have to deal with the adverse events of the disease and treatments, and low immunity predisposes them to the development of serious forms of infections, that can cause physical damage, negative repercussions on health care and on the quality of life of them and their caregivers.
Objectives: To evaluate the quality of life of caregivers of children and adolescents with cancer.
Methods: Observational, cross-sectional study, carried out from October to December 2022. We used social media, WhatsApp, and emails to invite caregivers of children and adolescents with cancer aged between 2 and 21 years. The survey was performed remotely, through the application of an online form that contained personal and sociodemographic data, the SF-36 questionnaire for assessing the quality of life of the caregivers.
Results: Thirty caregivers participated in the study, with a higher prevalence of females (86.7%). The caregiver's quality of life averaged 55.15 (SD=20.35), which represents a moderate to low quality of life. The worst quality of life scores of caregivers was observed in the domains "Vitality (45.17±XX)", "Emotional Aspects (45.55±XX)", and "Limitation due to Physical Aspects (48.33±XX)".
Conclusion: The quality of life of the caregivers of children and adolescents with cancer was moderate to low, related to impairment of vitality, emotional aspects, and limitation due to physical aspects. Strategies to improve the quality of life of caregivers of children and adolescents with cancer should be considered, therefore improving the integral care for this population and the caregivers.
Implications: Conducting further studies on quality of life in relation to other health conditions that may affect physically and mentally caregivers of individuals with childhood cancer may provide help to develop personalized rehabilitation programs for family's pediatric cancer patients.
Keywords: Childhood cancer, Health, Quality of life

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EFFECT OF PROPRIOCEPTIVE TRAINING ON THE MUSCLE STRENGTH OF INDIVIDUALS WITH ACUTE POST-COVID-19 SEQUELATES: RANDOMIZED CONTROLLED CLINICAL TRIAL

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Background: COVID-19, a disease resulting from infection by the SARS-CoV-2 virus, which can determine several sequelae, including a significant physical-functional deficit. In this sense, rehabilitation becomes essential and part of the recovery process of affected individuals, regardless of the severity of the clinical presentation. Proprioceptive training can increase the effectiveness of rehabilitation for these patients, as it is a combination of balance training and functional capacity training, promoting important results.
Objectives: To verify the effect of proprioceptive training on the muscle strength of individuals with acute post-COVID-19 sequelae.
Methods: Randomized controlled clinical trial. The volunteers were divided into 2 groups: Intervention Group (IG=28) and Control Group (GC=27). Three assessments were performed: initial assessment (TO), reassessment (T1) in the 6th session, and reassessment in the 12th session (T2). Sociodemographic data, muscle strength of the upper limbs by manual dynamometry and lower limbs by measuring functional mobility through the Timed Up and Go Test (TUG) were collected. The intervention program lasted 6 weeks, including physical training (twice a week for 60 minutes), divided into five phases: warm-up (10 minutes) involving joint mobility, stretching and breathing techniques; resistance training (20 minutes) walking; strength training (10 minutes) consisting of 7 exercises, with 2 sets of 10 repetitions for upper and lower limb muscle groups, using elastic bands, weights, graded according to the patient's capacity; balance training (10 minutes) consisting of static and dynamic exercises organized in 4 levels; and post-workout (10 minutes) composed of effort similar to warm-up. Descriptive statistics of the results were performed in the form of graphs of mean and standard deviation, for qualitative variables. When comparing manual dynamometry and TUG, an intention-to-treat analysis approach was used.
Results: In manual dynamometry, it was observed that the GI presented 35.4+3.00kgf (MSE) in (T0) and 37.05+11.249kgf (MSE) in (T2). Regarding the performance in the TUG, in the GI individuals there was an improvement that varied from 7.67 seconds (T0) to 6.775 seconds (T2).
Conclusion: Individuals submitted to 6 weeks of proprioceptive training, showed an increase in the muscle strength of the UL and LL.
Implications: These data are important to better prevent functional repercussions in COVID-19 survivors; showing the benefits of proprioceptive training in gaining muscle strength and improving functional capacity inherent to rehabilitation programs for this population.
Keywords: COVID-19, Proprioceptive Training, Muscle strength

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To the patients who participated and to the Laboratory of Kinesiotherapy and Manual Therapeutic Resources - LACIRTEM for providing its facilities and equipment to carry out this study.
Ethics committee approval: Ethics Committee for Research with Human Beings of the Federal University of Pernambuco (Opinion n°: 5.169.532).

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PSYCHOSOCIAL FACTORS INFLUENCE CRANIOFACIAL PAIN EXPERIENCED WITHIN 24 HOURS: CROSS-SECTIONAL STUDY

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Background: Craniofacial pain is among the most prevalent in the world. Due to multiple etiologies and factors, such as temporomandibular disorders, toothaches, and headaches. Craniofacial pain can negatively impact body functions and structures, resulting in activity limitations and participation restrictions. Young adult women are the most affected and, many times, their social participation, such as study or work, can be limited by this painful condition.
Objectives: To determine the main factors that influence the intensity and duration of pain in people who have had craniofacial pain in the last 24 hours.
Methods: This is a cross-sectional study that followed the STROBE recommendations. The research was disseminated through advertisements on social networks. A convenience sample was obtained, including volunteers aged between 18 and 40 years, university students of both sexes, with self-reported complaints of pain in the craniofacial region. A questionnaire prepared by the research team was applied, in addition to seven objective questions from the Brief Illness Perception Questionnaire (Brief IPQ). A two-step analysis was performed to determine the factors that significantly influenced pain intensity and duration: in the first, a simple linear regression, and ihe second, a multiple regression model based on the R^2 value.
Results: Eighty-seven volunteers, whose average age was 23 years, were included in the study. Among those included, 72 (82.75%) were women. In the present study, it was observed that the intensity and duration of pain felt in the last 24 hours are influenced by concern about the disease and thoughts related to the treatment of the disease, showing the influence of psychosocial aspects on pain perception. Pain intensity was associated with the importance the patient gives to the treatment and the patient's concern about their pain ($p<0.05$). The duration of pain was associated with the individual's concern about their disease ($p<0.05$).
Conclusion: According to data found in this study, thoughts related to treatment and concern about the disease reported by patients may be predictive factors for pain intensity and duration.
Implications: According to data found in this study, thoughts related to treatment and concern about the disease reported by patients may be predictive factors for pain intensity and duration.
Keywords: Facial Pain, Psychosocial Functioning, Students, Pain Perception

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Pernambuco, approval number: 190415058

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FALLS IN THE ELDERLY A BIBLIOMETRIC ANALYSIS OF STUDIES WITH ACCELEROMETRY

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Background: Population aging is a global trend, and falls represent one of the main public health problems in the elderly. The accelerometer can be an ally in preventing these events by identifying risk factors and predicting falls. The number of research with accelerometry has been growing exponentially in the last decades, and following the evolution allows identifying more investigated topics and knowledge gaps.
Objectives: To perform a bibliometric analysis of primary studies on accelerometry and falls in the elderly.
Methods: The search strategy (elder* OR old* OR aged AND fall* AND acceleromet*) was performed in March 2023 in the Web of Science database, applying a filter for original articles. Records were saved in BibiTeX format and analyzed in R (version 4.2.2) using the "bibliometrix" package (version 4.1.2).
Results: We identified 703 articles by 2751 authors, published between 1963 and 2023. The growth rate was 4.73% per year, with exponential growth from 2008. The studies were published in 310 scientific journals, most notably the journal Gait & Posture (n = 43) and averaged 33.6 citations per paper. The researcher Stephen Lord, from the University of New South Wales, Australia, had the largest number of publications (n=19), being recognized as one of the greatest references in the areas of balance, gait and falls in the elderly. The article entitled "Evaluation of a threshold-based tri-axial accelerometer fall detection algorithm" by Bourke et al. This paper describes the evaluation of a triaxial accelerometer-based fall detection algorithm, tested in different settings and physical activity contexts in the young and elderly. The co-occurrence network analysis of the authors' keywords resulted in the formation of 3 clusters, with emphasis on the themes of fall detection ("fall detection", "inertial sensors", "gyroscope", "machine learning", "deep learning", "smartphone"), gait and balance ("gait", "balance", "accidental fall", "Parkinson's disease") and physical activity ("physical activity", "walking", "mobility", "rehabilitation", "exercise").
Conclusion: The bibliometric analysis of the primary studies on accelerometry and falls in the elderly revealed a marked increase in the number of publications from 2008 onwards, evidencing the growing interest in motion sensors in the face of the aging population challenge. The most widely covered topics in the research were fall detection, gait/balance, and physical activity.
Implications: Studies on falls in the elderly using accelerometry are of great interest and relevance in the field of geriatrics and gerontology, and research in this area has contributed to the advancement of knowledge and the development of new technologies for the prevention of falls in the elderly.
Keywords: Aging, Falling, Accelerometer

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Acknowledgment: Not applicable.
Ethics committee approval: Not applicable.

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A RANDOMIZED CONTROLLED TEST PROTOCOL EVALUATING THE EFFECTS OF A CEREBELLO-SPINAL STIMULATION SESSION ON POSTURAL CONTROL IN ELDERLY

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Background: Balance is an important component of the functional capacity of the elderly and deficits in this ability can significantly affect their quality of life and independence. Transcranial direct current stimulation (tDCS) is a non-invasive technique that can increase the effect of exercise protocols on balance improvement in the elderly, by modulating the excitability of the stimulated areas, generating a plastic potential. Several protocols using tDCS and aiming at improving balance in the elderly have been tested in previous studies, with promising results. However, no study has investigated the impact of the use of cerebellum-spinal tDCS on the outcomes related to postural control, balance, and autonomy in healthy elderly.
Objectives: To investigate the effect of a single session of cerebellum-spinal tDCS on measures of postural control in older adults at increased risk of falls.
Methods: This is a double-blind, randomized, placebo-controlled clinical trial involving individuals aged 60 to 85 years with increased risk of falling. Participants will be interviewed to research inclusion and exclusion criteria. Those eligible who agree to participate will be randomly divided into the intervention and control groups. First, participants will be assessed with the following instruments: Functional Reach Test on Force Platform; Four Stage Balance Test; and Timed Up and Go. Immediately thereafter, they will receive a single session of cerebellum-spinal tDCS lasting 20 min and 2mA intensity. The anodic electrode will be fixed over the cerebellum and the cathodic electrode will be over the thoracic region (approximately T8). Immediately after the removal of the electrodes, the subjects will be reassessed with the same instruments. 48 h after the cerebellum-spinal tDCS session the participants will undergo a third evaluation with the same tests. The distribution profile of the data will be checked using the Shapiro-Wilk test, and according to the result, the comparison between the intervention and control groups, and the association between variables will be analyzed with the relevant statistical tests.
Results: It is expected that a single session of cerebellum-spinal tDCS will be able to promote changes in postural control, leading to an improvement in the performance of tests related to balance and autonomy in the sample of elderly at risk of falling.
Conclusion: The study is under development. The project will be defended this semester, and the project will be sent to the ethics committee of the institution. Following its approval, the volunteer recruitment phase will begin.
Implications: This study will aid in the understanding of the effects of using cerebellum-spinal tDCS on balance in older adults at increased risk of falls may increase the range of options of stimulation sites available for intervention using tDCS in this population.
Keywords: Fall risk, tDCS, Elderly

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Fundação Carlos Chagas Filho de Apoio à Pesquisa do Estado do Rio de Janeiro (FAPERJ, No. E-26/211.104/2021) and Coordenação de Aperfeiçoamento de Pessoal (CAPES, Finance Code 001; No. 88881.708719/2022-01, and No. 88887.708718/2022-00).

Ethics committee approval: The project is in the qualification phase and will be sent to the Ethics Committee.

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VALIDITY OF THE TELEPHONE-BASED APPLICATION OF THE PORTUGUESE VERSION OF THE PARKINSON'S DISEASE QUESTIONNAIRE (PDQ-39): PRELIMINARY RESULTS

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Background: Individuals with Parkinson's Disease (PD) commonly have disabilities that impact their health and quality of life. These individuals may have difficulties to access face-to-face health services. In addition, telerehabilitation has been an important strategy for healthcare. The 39-item Parkinson's Disease Questionnaire (PDQ-39) is a valid and recommended tool to assess the health-related quality of life of these individuals. However, studies investigating the concurrent validity of the telephone-based application of the PDQ-39 were not found.
Objectives: To investigate the concurrent validity of the telephone-based application of the PDQ-39 to assess the quality of life in individuals with PD.
Methods: This is a measurement proprieties study. Individuals were included according to the following criteria: idiopathic PD diagnosed by a neurologist, age 50 years or older, using an anti-parkinsonian medication, clinically stable for at least 6 months, and classified between stages 1-3 of the modified Hoehn and Yahr scale. The Portuguese version of the PDQ-39 was applied by interview in a face-to-face assessment, and after seven to 10 days, it was applied by telephone, by the same examiner. Descriptive statistics were used to characterize the sample. Intraclass correlation coefficient (ICC) was used to assess the agreement between the scores, considering the total score and domains' scores. When the ICC values were statistically significant, the magnitude was classified as: very low$\leq$ 0.25; low=0.26 to 0.49; moderate= 0.50 to 0.69; high = 0.70 to 0.89; and very high = 0.90 to 1.00. The established significance level was α=5%.
Results: A total of 49 individuals, 34 men (69.4%), with a mean age of 66.51$\pm$8.08 years and mean disease duration of 9.06$\pm$6.89 years, were included. Most were classified at stages 2 (46.9%) and 3 (20.4%) of the modified Hoehn and Yahr scale. Significant correlations, classified as very high magnitude for the total score (ICC= 0.95; p<0.001) and for the stigma and mobility domains (0.92<ICC<0.94; p<0.001), and classified as high for the domains social support, activities of daily living, cognitive impairment, communication, bodily discomfort, and emotional well-being (0.77<ICC<0.81; p<0.001) were found.
Conclusion: Preliminary results indicate that the telephone-based application of the Portuguese version of the PDQ-39 has adequate concurrent validity to assess the quality of life in individuals with PD. However, the study must be finalized to ensure these results.
Implications: These results indicate the potential of assessing the quality of life of individuals with PD using the PDQ-39 over the telephone, which can increase the feasibility of administration, reduce problems with transportation and costs.
Keywords: Parkinson's Disease, Quality of Life, Validation Study

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Financial support provided by FAPEMIG, CAPES (finance code 001, CNPQ e PRPq/UFMG.
Ethics committee approval: Comitê de Ética em Pesquisa da Universidade Federal de Minas Gerais (COEP/UFMG) (CAAE: 5.3970.421.0.0000.5149).

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FUNCTIONAL CAPACITY AND DISABILITY IN OLDER ADULTS WITH CHRONIC LOW BACK PAIN: A STUDY OF RESPONSIVENESS

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Background: Chronic low back pain (LBP) is a prevalent condition in older adults, being identified as a cause of disability in this population. Despite ir validity and reliability, the functional capacity tests are not often administered in patients with LBP but provide useful information related to mobility. A measurement property of the functional capacity tests that has not been investigated extensively in the LBP field is the resiveness, such as the capacity to detect changes during the intervention.
Objectives: To determine the responsiveness of three functional capacity tests, the Timed Up and Go test, the 4-meter Walk test, the 5 times Sit to Stand test, and to compare with the responsiveness of the Roland Morris Disability Questionnaire (RMDQ) in older adults with chronic LBP undergoing an 8-week intervention.
Methods: This is a responsiveness study with measurement before and after an 8-week intervention. It was prospectively registered at the Brazilian Registry of Clinical Trials (RBR-9prhzng). Patients with nonspecific LBP (age $\geq$60) were recruited. The functional capacity tests and the RMDQ were administered at baseline and after 8 weeks. The intervention followed the recommendations from clinical practice guidelines for the management of nonspecific LBP: The responsiveness was determined by calculating the effect size (ES), correlation analysis, and the analysis of the Receiver Operating Characteristic (ROC) Curve to calculate the area under the curve (AUC).
Results: 118 older adults with chronic LBP were recruited. The RMDQ was the most responsiveness measure, followed by the Sit to Stand test. The ES for the RMDQ was large (ES= -0,74; 95%IC: -0,56; -0,92), whereas the 5 Times Sit to Stand test presented a small effect (EF= -0,45, 95%CI: - 0,26; -0,64). The Timed UP and Go test and the 4-meter Walk test small ESs (ES< 0,25). The 5 Times Sit to Stand test was the only one to show a fair correlation (0,25 < r <0,50) with RMDQ. The ROC analysis, only the RMDQ showed AUC values above the cut-off point of 0,70.
Conclusion: The RMDQ was responsive to an 8-week lumbar stabilization program in older adults with chronic LBP. The 5 Times Sit to Stand test was the most responsive but presented limitations with regard to the capacity to discriminate patients who recovered from those who did not recover. A possible explanation for the lack of responsiveness foto the tests may be due to the nature of the intervention, which was not focused on increasing ability and balance, components that are necessarily assessed by functional capacity tests.
Implications: Functional capacity tests are widely used to assess mobility and balance in older adults. Only the 5 Times Sit to Stand

test was considered to able to detect changes in older adults who underwent an 8-week intervention program. The RMDQ was more responsive than any of the functional capacity tests.
Keywords: Chronic low back pain, Functional capacity, Disability

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Universidade Federal de Minas Gerais (CAAE:34085520.3.0000.5149).

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PROBABLE SARCOPENIA, PAIN, AND DISABILITY IN OLDER ADULTS WITH CHRONIC LOW BACK PAIN

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Background: As the population ages, the prevalence of chronic musculoskeletal conditions, such as low back pain (LBP), increases. Sarcopenia, defined an age related loss of skeletal muscle mass, is a prevalent condition in the older population contributes significantly to functional decline, disability, frailty, and falls. The coexistence of both conditions may negatively impact the functional decline of the older adults, which may require a specific therapeutic approach to deal with both conditions. However, the first step is to investigate the prevalence of probable sarcopenia among older adults with chronic LBP and whether older adults with both conditions are more clinically disabled than older adults with chronic LBP without probable sarcopenia.
Objectives: The aims of this study were to determine the prevalence of probable sarcopenia among older adults with chronic LBP seeking physical therapy care in a primary care setting and to investigate whether older adults with chronic LBP and probable sarcopenia present with higher pain and disability than those with chronic LBP and no probable sarcopenia.
Methods: This is a cross-sectional study design. We recruited older adults (age $\geq$60) living in Belo Horizonte, Brazil, reporting LBP for more than 3 months, seeking physical therapy care in a basic health unit (i.e. primary care setting) from the Brazilian National Healthcare System. Data collected included age, sex, pain intensity (0-10 scale), disability (i.e., Roland Morris disability questionnaire) and probable sarcopenia (i.e. algorithm from the European Working Group on Sarcopenia in Older People – EWGSOP2). To compare pain and disability levels in older adults with chronic LBP with and without probable sarcopenia, we calculate the mean difference (MD) and its confidence interval (CI).
Results: A total of 156 participants (73%women), mean age of 69.5 $\pm$ 6.2 years, mean pain intensity of 7.1 $\pm$ 2.3 points, and mean disability of 12.7 $\pm$ 5.5 points. The prevalence of probable sarcopenia was 31.40%. Patients with chronic LBP and probable sarcopenia reported higher mean pain intensity (MD=1.63; 95%CI: 0.89, 2.37) and disability (MD=5.38; 95%CI: 3.69, 7.07) than those with no probable sarcopenia.
Conclusion: Nearly a third of older adults with chronic LBP seeking physical therapy care were classified as having probable sarcopenia. These patients reported higher pain and disability than patients with chronic LBP with no probable sarcopenia.
Implications: In clinical practice, an approach to screening cases in older adults with chronic LBP and probable sarcopenia may help to identify more severe and disabling cases of low back pain. Future studies should investigate the prognostic value of sarcopenia in older adults with LBP. It may be possible that future therapeutic approaches should be developed and tested to treat older adults with both conditions.
Keywords: Chronic low back pain, Probable sarcopenia, Older adults

Conflict of interest: The authors no conflict of interest.
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LOWER LIMB COORDINATION AND COORDINATION VARIABILITY IN MALE AND FEMALE RUNNERS WITH AND WITHOUT PATELLOFEMORAL PAIN

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Background: According to the dynamic system theories, the motions of the lower limb are coupled, and it is likely that these motions may be uncoupled/less well coordinated in the presence of patellofemoral pain (PFP). Literature also suggests that there may be differences between males and females with and without PFP. However, evidence to support this hypothesis in runners is contradictory.
Objectives: To investigate differences between lower limb coordination and coordination variability between male runners with and without PFP and between female runners with and without PFP.
Methods: A cross-sectional study involving 83 runners. The female group was composed by 40 runners, 20 with PFP (mean age 27.5 years, running average of 20.1 km/week, mean duration of pain 14.6 months) and 20 without PFP (27.2 years, running average of 28.5 km/week). The male group was composed of 43 runners, 22 with PFP (28.4 years, running average of 22.5 km/week, mean duration of pain 14.4 months) and 21 without PFP (28.5 years, running average of 39.8 km/week). A 3-dimensional kinematics analysisthe femur, tibia, and foot during g a treadmill running was recorded. Vector Coding technique was used to analyze coordination and coordination variability for the femur-tibia-foot segments couplings. The couplings variables of interest were: (I) tibia internal/external rotation vs foot inversion/eversion, (II) femur internal/external rotation vs foot inversion/eversion, (III) femur adduction/abduction vs foot inversion/eversion, (IV) femur flexion/extension vs tibia flexion/extension, (V) femur adduction/abduction vs tibia adduction/abduction. Differences between males with and without PFP

and between females with and without PFP were investigated using independent T tests and Mann-Whitney tests ($\alpha<0.05$).
Results: In coordination patterns — male runners with PFP were significantly different to male runners without PFP for the following couplings: (1) femur internal/external rotation vs foot inversion/eversion (p=0.031), (2) femur adduction/abduction vs foot inversion/eversion (p=0.001) and (3) femur flexion/extension vs tibia flexion/extension (p=0.005). No differences were found for female runners.

In coordination variability — males with PFP had lower variability than those without PFP for the following couplings: (1) tibia internal/external rotation vs foot inversion/eversion ($p<0.001$), (2) femur internal/external rotation vs foot inversion/eversion (p=0.002), (3) femur adduction/abduction vs foot inversion/eversion (p=0.012) and (4) femur flexion/extension vs tibia flexion/extension ($p<0.001$). No such differences were found for female runners.
Conclusion: According to our findings, male runners with PFP had different coordination patterns and presented lower coordination variability than those without PFP. This is in agreement with the theory that less coordination variability is indicative of a pathological coordinate state with reduced ability to adapt, which could lead to repetitive stress in the knee joint over time. On the other hand, it appears that female runners with PFP do not have alterations in coordination patters or its variability when compared with females without PFP for the couplings analyzed.
Implications: The results of this study allow for a better understanding of the movement alterations that occur in runners with PFP. Future studies should investigate whether alterations in the couplings between lower limb segments are risk factors for the development of PFP in runners.
Keywords: Dynamic system, Patellofemoral pain, Sport

Conflict of interest: The authors declare no conflict of interest.

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Ethics committee approval: This study was approved by Universidade Federal de São Carlos's Ethics in Research Committee (No. 3.089.896).

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DYSMENORRHEA AND PELVIC FLOOR MUSCULAR DYSFUNCTIONS IN YOUNG NULIPARAUS WOMEN: IS THERE AN ASSOCIATION?

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Background: The pelvic floor musculature (PFM) plays a role that influences bladder, intestinal and sexual functions and when this musculature is affected, it can develop several symptoms with high prevalence in the female population. For women of reproductive age, every month passed by menstrual periods could have dysmenorrhea, a source of chronic pelvic pain originating from a difficult menstrual flow. There are few data on the influence of dysmenorrhea on other PFM disorders.
Objective: To correlate dysmenorrhea with PFM disorders in young nulliparous women.
Methods: A descriptive, observational, cross-sectional study with a quantitative approach was carried out. Enrollment was optional, with women aged between 18 and 30 years old, nulliparous, who had never been pregnant, had already experienced their first sexual intercourse and who did not have their menstruation on the day of the assessment. The evaluation was carried out through the application of tests (socio-clinical, International Consultation on Incontinence Questionnaire-Short Form, Pelvic Floor Distress Inventory, Visual Analog Scale (VAS) and, later, through the physical examination of the strength of the PFM through the Perfect scheme. Data were analyzed according to the sample's normality distribution, comparing the groups with and without pelvic floor dysfunction according to the presence of dysmenorrhea using the t-test for independent samples. The Statistical Program for Social Science program (version 23) was used, considering a significance level of 5%.
Results: The sample was fixed by 45 women (median age 21 years). The prevalence of dysmenorrhea was 77.7% with pain intensity 5 (2 - 6.50) on the VAS scale. The main symptoms of premenstrual tension were those of an emotional nature, such as irritability (84.4%), anxiety (73.3%), desire to cry (71.1%) and sadness (71.1%). The sample showed muscle weakness with a median of 3 (2 — 3) in the Perfect scheme, and 24.4% of the sample reported some type of urinary incontinence, and 17.7% had constipation. The group with dysmenorrhea had worse vaginal (p=0.04) and intestinal (p=0.03) dysfunctions. There was interference between dysmenorrhea, vaginal (R=0.81) and intestinal (R=0.57) disorders.
Conclusion: Dysmenorrhea is prevalent in young nulliparous women with an association between vaginal and intestinal dysfunctions, this population presents pelvic floor muscle weakness and symptoms of premenstrual tension predominantly of an emotional nature.
Implications: In scientific terms, this study demonstrated that PFM dysfunctions are a reality among young nulliparous women and that women with dysmenorrhea every month may be more subject to vaginal and intestinal dysfunctions with possible chronic implications for their health. In clinical terms, it is important to consider the complaint of dysmenorrhea in the evaluation and to question and physically assess the bladder, vaginal, sexual, and intestinal functions that may be associated.
Keywords: Diaphragm of the Pelvis, Dysmenorrhea, Women's health

Conflict of interest: The authors declare no conflict of interest.

Acknowledgment: I would like to thank the research group for their assistance during the work and Prof. Dr. Josiane Lopes for her guidance.

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VIRTUAL REALITY TRAINING COMPARED TO STATIONARY CYCLING IN INDIVIDUALS WITH PARKINSON'S DISEASE: PROTOCOL OF A RANDOMIZED CLINICAL TRIAL

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Background: Parkinson's disease (PD) is a chronic, progressive, and neurodegenerative disease, characterized as one of the most common neurological conditions and which shows signs of resting tremor and cognitive decline that impact on quality of life and the performance of daily activities. Furthermore, active stationary cycling

(ASC) treatment has been shown to reduce tremor and improve upper limb (ULL) performance in people who have PD. In recent years, virtual reality has been introduced as a therapeutic tool in neurorehabilitation. Additionally, non-immersive VR exergames have been verified as safe and effective therapies for improving motor skills. On the other hand, the effects of using Immersive Virtual Reality (IVR) through the QUEST 2 device in the treatment of people with PD were not evaluated, especially on tremor and cognition.
Objectives: This study aims to evaluate the effectiveness of immersive virtual reality training, through exergames from Quest 2 device, compared to ASC training on resting tremor, UL performance and cognition of people with PD.
Methods: This is a randomized, blinded, controlled clinical trial, with a protocol based on the checklist CONSORT. Will be recruited a sample of 36 people with a diagnosis of PD, on stable treatment with Levodopa, classified in stages I to III of the Hoehn & Yahr classification, aged between 50 and 85 years, with classic Parkinsonian tremor type 1, according to the Movement Disorders Society consensus statement, with normal or corrected visual and hearing acuities and with a minimum of 4 years of formal study. Participants will be randomized to IVR (n=18) and ASC (n=18) groups. The protocol of interventions will last 8 consecutive weeks, divided into two weekly sessions, lasting 60 minutes. The primary outcome will be assessed with the Unified Parkinson's Disease Rating Scale (UPDRS) parts II and III and with the application "Study my tremor". Secondary outcomes will be evaluated with the Nine-hole peg test, Box and block test, Trail Making Tests, REY list and Parkinson's Disease Questionnaire-39 (PDQ-39). The evaluations will be carried out prior to the interventions, at the end of the interventions and 30 days after the end of the interventions.
Results: Considering that, currently, the options for the treatment of tremor in PD are based on the use of medication and invasive surgical procedures, it is expected that the spontaneous information in the study can elucidate the benefits of conventional training, inspired to maximize the possible therapeutic approaches of that population.
Implications: The effects of IVR training compared to ASC on the outcomes have not yet been evaluated in patients with PD. This study will help physiotherapists in the decision-making process, regarding the most effective resource for this population, as it will provide the background for weighing the clinical viability between these two resources.
Keywords: Parkinson's Disease, Tremor, Immersive Virtual Reality

Conflict of interest: The authors declare no conflict of interest.

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GROSS MOTOR FUNCTION-FAMILY PREPORT (GMF-FR) - MEASUREMENT PROPERTIES

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Background: Cerebral Palsy has several characteristics that can influence gross motor performance, the activities and participation of children and adolescents with this health condition. Knowing that family-centered assessment instruments are essential in the assessment of these patients, the Gross Motor Function – Family Report (GMF-FR) was developed, which is a self-reported instrument, easy to apply clinically and that assesses gross motor performance for this population.
Objectives: Analyze GMF-FR measurement properties.
Methods: Methodological study. The GMF-FR was applied remotely with parents to validate measurement properties. The test-retest reliability was analyzed using the Intraclass Correlation Coefficient (ICC), for which a period of 7-30 days was respected: homogeneity by Cronbach's alpha. The discriminative validity between the GMF-FR and the Gross Motor Function Classification System (GMFCS) was observed by Spearman-rho correlation (rho) and One-way ANOVA, with post-hoc Tukey. A significance level of α=0.05 was considered.
Results: 146 children and adolescents with a mean age of 6.8 years (3,437) participated, covering all levels of functioning measured by the Gross Motor Function Classification System (GMFCS), with 50% level I, II and III and 50% level IV and V. Of these participants, 66.4% had bilateral impairment and 75.3% used some assistive technology. The GMF-FR was preferably answered by mothers (90.4%). Respondents had an average age of 37.3 years (SD=XX) and 52.7% had access to higher education. High homogeneity (α=0.99) and excellent reliability (ICC=0.99; 0.98$\leq$95%CI$\geq$0.99) were observed. The GMF-FR showed a strong negative correlation with the GMFCS (rho=-0.92p$<$0.001) and was able to discriminate gross motor performance between all GMFCS levels (Between Level I and II p$<$0.015; and between all other levels p$<$0.001).
Conclusion: The GMF-FR is a valid and reliable instrument to assess gross motor performance and capable of discriminating by level of GMFCS the children and adolescents with CP.
Implications: The GMF-FR is a new reliable instrument for assessing the gross motor performance of children and adolescents with CP, in addition to being accessible and easy to apply clinically, directly impacting the practice of health professionals during the assessment of key goals for treatment of children and adolescents with CP
Keywords: Cerebral Palsy, Gross Motor Function Measure, GMFM

Conflict of interest: The authors declare no conflict of interest.

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PERCEPTION OF PHYSIOTHERAPISTS ABOUT THEIR WORK MARKET

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Background: In Brazil, the distribution of professionals between regions is influenced by the process of interiorization and urbanization, making it a challenge for the management of health resources, therefore, a poor distribution of professionals can lead to changes in professional satisfaction. In the current scenario,

physiotherapists work in prevention, rehabilitation, and health promotion at all levels of care, standing out as fundamental for reducing health-related risks to functional recovery and improving quality of life.
Objectives: To identify the perception of Physiotherapists in relation to the labor market.
Methods: This was a descriptive and exploratory study with a quantitative approach. Data collection was carried out using an online semi-structured instrument, capturing participants through the snowball strategy. Data were treated using descriptive statistics.
Results: A total of 495 physiotherapists from 23 Brazilian states freely responded to the data collection instrument, of which 65.9% were completely satisfied or satisfied with their own work and stated that without graduate school they would not occupy their current position. job (59.6%), however, they were indifferent/disagree/completely disagree (56.2%) that the physiotherapist job market was saturated. About a third of the participants declared a gross monthly income between 1500 and 3000 reais (30.3%) and 3000 to 6000 reais (31.9%) and 67% of the participants had two jobs or more, in addition to only 34.6% of participants said they were satisfied or very satisfied with their salary.
Conclusion: The data infer that although physiotherapists have a quick insertion in the labor market, the specialized workforce favors the employability of the profession, however, a small number of professionals feel satisfied with their current remuneration, it should be noted that a large part of professionals carry out their activities in more than two contracts, which can cause damage to the health of these professionals.
Implications: It is necessary to carry out new studies with robust methodologies, discuss issues such as the salary floor of the category and job plan, career and remuneration of civil servants together with the representative entities, as well as analyze the distribution and opening of new courses as needed by region.
Keywords: Physical Therapy, Job Market, Job Satisfaction

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EFFECTS OF CARDIOVASCULAR REHABILITATION ON THE ATTITUDE AND QUALITY OF LIFE OF PATIENTS WITH DIABETES AND NEUROPATHIC PAIN

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Background: Diabetic neuropathy is one of the main complications related to diabetes mellitus (DM), which increases the risk of disabilities such as foot ulceration and amputations. Neuropathic pain, in turn, is often present in neuropathy and is characterized by a disturbance to the peripheral nervous system due to irregular activation of the nociceptive pathway, leading to functional impairment and quality of life. Therefore, therapies that help minimize the repercussions of pain and prevent the progression of diabetic neuropathy are relevant.
Objectives: To evaluate the effectiveness of a cardiovascular rehabilitation protocol on the quality of life and attitude towards coping with the disease of patients with diabetic neuropathic pain.
Methods: This is a case series study carried out between March and November 2022, involving people with diabetic neuropathic pain who participated in a cardiovascular rehabilitation protocol at a hospital in the city of Fortaleza/CE. The study complied with all ethical precepts. General data were collected from the participants, such as age, education, and type of DM. An evaluation was performed before and after training, with the application of The Medical Outcomes Study 36-item Short-Form Health Survey (SF-36) and Diabetes Attitude Questionnaire (ATT-19) questionnaires, which assess quality of life and attitude of the patient facing diabetes, respectively. For the statistical significance of the data, $p<0.05$ was established.
Results: The sample consisted of 9 participants, all diagnosed with type 2 DM and diabetic neuropathic pain, 7 (77.8%) female and 2 (22,2%) male, with a mean age of 59.1 ± 10 years and 55,6% with only elementary school (complete or incomplete). Comparing the before and after, a statistically significant improvement was observed in the domains functional capacity (p=0.006), physical aspect (p=0.001), vitality (p=0.014), emotional aspect (p=0.005), mental health (p=0.025), and improvement in the ATT-19 score (p=0.038), showing a positive attitude towards the disease.
Conclusion: A physical training protocol seems to be effective in improving different domains of quality of life observed by the SF-36, as well as the attitude of patients in coping with diabetes, showing an important contribution to the psychological and emotional aspects of people with DM. However, new studies with a more robust sample are valid for a broader analysis.
Implications: The data demonstrate the relevance of cardiovascular rehabilitation in the health of patients with diabetes, with its benefits widely known, with emphasis here on improving quality of life, self-esteem, and mental health, serving as an incentive for the implementation of rehabilitation programs in different health units
Keywords: Diabetes Mellitus, Diabetic Neuropathies, Quality of life

Conflict of interest: The authors declare no conflict of interest.
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CORRELATION BETWEEN PELVIC FLOOR DYSFUNCTIONS AND SEXUAL FUNCTION IN NULIPARAUS YOUNG WOMEN

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Background: The pelvic floor (PF) functions as a support for pelvic organs performing various functions associated with bladder, bowel, reproductive and sexual functioning. When the PF musculature

(PFM) is healthy and functional, it is voluminous and has a good capacity for contraction and relaxation. However, when there is a weakness in the functioning of this musculature, several dysfunctions can occur and influence the female sexual function. Sexual dysfunctions (SD) are classified into female orgasm disorder; female sexual arousal disorder; genito-pelvic disorder/penetration; and substance-induced sexual dysfunction. SD and MAP usually impact women, generating activity and participation limitations.
Objectives: To identify PFM disorders in young nulliparous women and correlate them with sexual function.
Methods: A descriptive, observational, cross-sectional study with a quantitative approach was carried out. The sampling process was of the convenience type, being selected women aged between 18 and 30 years, nulliparous, who had never been pregnant, had already experienced the first sexual intercourse and who were not menstruating on the day of the evaluation. The evaluation was carried out through the application of questionnaires (socio-clinical questionnaire, Pelvic Floor Distress Inventory, Female Sexual Function Index, International Consultation on Incontinence Questionnaire-Short Form, Jorge & Wexner Anal Incontinence Scale) and, later, by the physical assessment of perineal body tone, external anal sphincter tone and PFM strength using the Perfect scheme. Data were analyzed according to the distribution of sample normality, comparing the groups with and without pelvic floor dysfunction according to the presence of sexual dysfunction using the t test for independent samples. The Statistical Program for Social Science program (version 23) was used, considering a significance level of 5%.
Results: Participants were 45 young nulliparous women with a median age of 21 years. Most participants (75.5%) had an active sex life with a steady partner. Regarding pelvic floor disorders, 24.44% had bladder dysfunction (urinary incontinence), 31.11% had SD (pain and low lubrication) and 15.55% had coloproctological changes (intestinal constipation). Most of the sample had muscle weakness (with a median of 3 degrees) and normotonia in the perineal body (n=33) and external anal sphincter (n=38). Participants with SD had worse values for the pain/discomfort and lubrication domains in the Female Sexual Function Index instrument. In the comparative analysis between SD and other PFM dysfunctions, it was verified that the group with SD had more vaginal (p=0.04) (trigger points and fissures) and intestinal (p=0.02) dysfunctions (intestinal constipation).. There was a correlation between SD, vaginal (R=0.04) and intestinal (R=0.04) dysfunctions.
Conclusion: There was a predominance of urinary dysfunction among PFM disorders and the prevalence of SD was high, taking into account that these are young nulliparous women. Women with sexual dysfunction have worse intestinal and vaginal functions with a correlation also between the same dysfunctions.
Implications: In scientific terms, this study presents relevant data by presenting high frequencies of pelvic floor dysfunctions and correlations with SD in young and nulliparous women. In clinical terms, the importance of the functional assessment of the PFM and how the sexual function of the PFM can be assessed by the physiotherapist is highlighted.
Keywords: Women's health, Pelvic diaphragm, Sexuality

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ANALYSIS OF MIGRATION BETWEEN STATES FOR HOSPITAL ADMISSION OF PATIENTS WITH CEREBRAL PALSY IN BRAZIL IN 2019

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Background: Cerebral Palsy (CP) is defined as a non-progressive neurological condition of the motor development caused by disorders that occurred in the developing brain, leading to limitations in several systems. Providing integral health assistance means offering health services at all levels of care, meeting the existing needs of the population. However, the low quality of the services and accessibility problems demonstrate that the care model of the country can sometimes be inefficient. Asymmetries and flaws in the effectiveness of the current model often make it necessary for parents/guardians of patients with CP to search hospital care in Federative Units (FUs) other than the FU of residence.
Objectives: Analyze the number of patients with Cerebral Palsy assisted who sought hospital care in Federative Units different from the FU of residence.
Methods: Descriptive study based on data from the information systems of the Ministry of Health on hospital admissions on a nationwide level. Data obtained were authorizations for hospitalization, FU where the establishment is located, FU where the patient resides and an indicator of care at a FU other than the location of residence. The FUs were also grouped in macroregions. Data were analyzed using the R software and presented in frequency measures.
Results: A total of 8,785 inpatient admissions from patients with CP were registered in Brazil during 2019. The southeast region had the highest number of records, and the north had the lowest. Of the total number of inpatient admissions records, about 4.5% were from patients treated in a FU different from their FU of residence. ¼ of these records belonged to the Midwest region, which is the region that receives most patients from other locations; this region received patients from all regions of the country and from almost all states. The northern region did not register care for patients from any of the other regions; and the southern region registered only one. In the analysis by state, it was observed that, in general, states rarely receive patients residing in other states. The exception was the Federal District, which recorded that 65% of hospitalizations of patients with CP in establishments located in the district are residents of other states; Goiás is responsible for 35% of these admissions.
Conclusions: The Brazilian states do not receive many patients coming from other FU, and when they do, they are normally from close states. The North did not register attendances of patients not residing in the region; however, the other regions of the country admitted patients from the northern region. Unlike other states, the Federal District mainly serves patients residing in other locations.
Implications: It is possible that there is a difference in quality and aptitude of assistance for patients with CP between regions and states of Brazil, which leads these patients to be cared for in health facilities located in a FU different from their residence. These data can indicate which states need the attention of health managers, and actions that identify points of improvement for the service capacity.
Keywords: Cerebral Palsy, Health Services Accessibility, Unified Health System

Conflict of interest: The authors have no conflicts of interest to declare.
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ASSOCIATION BETWEEN AGE AND HOSPITALIZATION IN INTENSIVE CARE UNITS OF PATIENTS WITH CEREBRAL PALSY IN BRAZIL

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Background: Cerebral Palsy (CP) is a non-progressive neurological disorder resulting from brain injury that can occur prenatally, perinatally or postnatally; being the most common physical disability of childhood. Patients with CP may need assistance in Intensive Care Units (ICUs) at different stages during their development, due to the worsening of conditions with the presence of associated conditions, for example, convulsive syndrome and respiratory diseases, such as respiratory failure and pneumonia. Changes in tonus and posture, frequent in patients with CP, impair lung function, making respiratory conditions responsible for most ICU admissions and for the morbidity and mortality rate in this population.
Objectives: Verify the association between the frequency of admissions in Intensive Care Units and age groups in patients with Cerebral Palsy through the Unified Health System (SUS).
Methods: The study was developed based on data from the Ministry of Health's Hospital Information System on inpatient admissions by the SUS at the national level for the years 2015 to 2019. The patient's age and indication of ICU use were obtained. Ages were grouped into groups of age groups, according to the grouping used by the Brazilian census. Data were analyzed using the R software. A chi-square test of independence was applied, with standardized residuals adjusted and significance level correction. Cells with statistically significant differences were those that had adjusted standardized residues outside the adjusted limits.
Results: The chi-square test of independence showed that there is an association between age group and ICU use in patients with CP ($X(17) = 5,083.8$; $p < 0.001$; Cramér's $V = 0.342$). The analysis of the adjusted standardized residuals showed that there are more cases of ICU use in the age groups up to 14 years, especially up to 1 year of age; and fewer cases in the age groups between 15 and 49 years. The frequency of patients with CP who are aged up to 14 years and use the ICU is higher than the expected frequency, therefore indicating that there is an association between the two variables. In the age groups from 15 to 49 years old, the opposite happens, the frequency of patients using the ICU is lower than expected. In patients aged over 65 years, this frequency is again higher, but without statistical significance.
Conclusions: Age is a variable that is associated with a higher frequency of admissions to the intensive care unit of patients with CP, and the younger the age, the greater the number of admissions.
Implications: Since hospitalizations and clinical complications of patients with CP can be caused by multiple etiologies, in line with the variety of possible associated conditions, and that this factor complicates the process of diagnosing/monitoring them, the importance of health care of these patients is emphasized at early age, as well as the relevance of early diagnosis/intervention to prevent hospitalization and worsening of the condition.

Keywords: Cerebral Palsy, Unified Health System, Intensive Care Units

Conflict of interest: The authors have no conflicts of interest to declare.
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PRESENCE OF MULTIMORBIDITY AMONG ADULTS WITH CHRONIC BACK PAIN IN BRAZIL, NATIONAL HEALTH SURVEY 2019

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Background: Chronic back pain (CBP) is a worldwide health problem. Recent evidence points to the coexistence of CBP with other comorbidities, configuring a scenario of multimorbidity. However, the impact of multimorbidity on patients with CBP is still unclear.
Objectives: To investigate existing differences in levels of activity limitation due to CBP, self-rated health status and use of health services among adults with CBP with and without multimorbidity.
Methods: Cross-sectional study with data from adults (≥18 years) who self-reported having CBP (n=18930) in the National Health Survey 2019. Multimorbidity was defined by the presence of one or more chronic diseases in addition to CBP. Data related to sociodemographic variables (gender, body mass index (BMI)), activity limitation (scale 1-5 points: "not limit" =no limitation and "little", "moderate", "intense" and "very intense" = with limitation), self-rated of health status (scale 1-5 points: "very good", "good", "regular" = positive perception and "poor" and "very poor" = negative perception), use of health services in the last 15 days and of hospitalization in the last 12 months (yes or no) were collected. Differences in proportions (SD) between groups and respective confidence intervals (95%CI) were calculated for sociodemographic and health indicators. Chi-square test was used to determine significant differences ($p > 0.05$) between groups.
Results: Of the total 18930 adults with CBP, 12,832 (69.4%) reported having multimorbidity. Most adults with CBP and multimorbidity were women (SD=19.4%, 95%IC 17.9-20.89) people with obesity (BMI>30kg/m2) (SD=11.3%, 95%CI: 10.04-12.55), higher activity limitation (SD=14.4%, 95%CI:12.93-15.86), worse health status (SD=10,3%, 95%CI: 9.4;11.2), higher use of health services in the last 15 days (SD=17.1%, 95%CI: 15.7-18.4) and more frequent hospitalization in the last 12 months (SD=6.4%, 95%CI: 5.6-7.2) when compared to adults with CBP but without multimorbidity.
Conclusion: About 7 out of 10 adults with CBP have multimorbidity. Adults with CBP and multimorbidity are mostly women, usually obese, reported having more activity limitations, worse health status and recently seeking care at health services.
Implications: Multimorbidity is prevalent in the CBP population and must be considered during evaluation and treatment.
Keywords: Back pain, Multimorbidity, Brazil

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: The study was supported by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).
Ethics committee approval: Brazilian Committee on Ethics in

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TREATMENT FOR CHRONIC BACK PAIN AND MULTIMORBIDITY AMONG BRAZILIAN ADULTS: WHERE ARE WE IN RELATION TO THE RECOMMENDED GUIDELINES?

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Background: Chronic back pain (CBP) is a worldwide public health problem. CBP generates negative impacts on the lives of individuals and costly expenses for the health system, including those directed at treatments for CBP. However, the impact of multimorbidity on the treatment of CBP is still unclear.
Objectives: To identify the types of treatments commonly reported by adults with CBP with and without multimorbidity.
Methods: Cross-sectional study with data from Brazilian adults (≥18 year) who self-reported CBP (n=18930) in the National Health Survey 2019. Treatments for CBP were identified through the dichotomous yes/no answer: physical therapy; exercises regularly; uses medication or injections; makes use of acupuncture, medicinal plants and phytotherapy, homeopathy, meditation, yoga, tai chi chuan or some other integrative and complementary practice; and regular follow-up with a health professional. Descriptive statistics were reported and associations between the two groups were confirmed using adjusted logistic regression models and confidence intervals (95% CI). Sociodemographic variables such as age, sex, schooling, income and health insurance were used as covariates in the analysis.
Results: Adults with CBP and multimorbidity (69.4%) had higher prevalence and association for physical therapy (14.2% vs.7.9%; adjusted OR (ORa)= 1.61, 95%CI: 1.33- 1.94), use of medication or injections (47.8% vs.36.5%; ORa= 1.38, 95%CI: 1.22-1.56), and follow-up with a health professional (29% vs. 17.5%; ORa= 1.51, 95%CI: 1.29-1.78) compared with adults without multimorbidity. There was no difference between groups for use of acupuncture, medicinal plants and phytotherapy, homeopathy, meditation, yoga, tai chi chuan or some other integrative and complementary practice and regular exercise due to CBP.
Conclusion: The study revealed that most adults with CBP do not undergo physical therapy or regular exercise, with the use of medication or injections being the most used intervention, especially among adults with multimorbidity. Health education strategies, encouraging the practice of regular exercise and greater access to physiotherapy are fundamental for changing this scenario.
Implications: The study reinforces the need for health education strategies, encouraging the practice of regular exercise and greater access to physical therapy.
Keywords: Back pain, Treatment, Brazil

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: The study was supported by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).
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EFFECTS OF A MAT PILATES PROTOCOL ON THE POSTURAL BALANCE OF ELDERLY PEOPLE: A RANDOMIZED CLINICAL TRIAL

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Background: The aging process is accompanied by a progressive loss of systems functioning that can lead to balance deficits. The Pilates method has been shown to be effective in improving balance in the elderly, as it promotes improved muscle strengthening in practitioners.
Objectives: To verify the effects of a 15-week Mat Pilates program on the postural balance of the elderly.
Methods: This is a randomized controlled clinical trial that evaluated the postural balance (Mini-BESTest) of 58 elderly people, randomized into two groups called Control Group/CG (n=29) and Pilates Group/GP (n=29), who performed an exercise program based on the Pilates method, consisting of thirty sessions.
Results: There was a significant improvement in the average MiniBEST score in the Pilates Group (25.48 ± 1.90) after the intervention. The t-statistical analysis indicated a significant difference between the Pilates and Control groups after the intervention (t = 4.58) but not before the intervention (t = -0.38), suggesting that Pilates had a positive effect on functionality and balance compared to the control group.
Conclusion: A program composed of thirty sessions of Mat Pilates, spread over 15 weeks, was enough to demonstrate a significant improvement in the balance of the elderly.
Implications: This method proved to be safe and effective, with satisfactory results and low financial cost, requiring only the use of a mat for body practice.
Keywords: Pilates, Postural Balance, Elderly

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: The research was approved by the Faculty of Health Sciences-UnB under opinion number: 5.287.203.

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PHYSIOTHERAPY CARE IN LABOR IN A USUAL RISK MATERNITY: A DESCRIPTIVE STUDY

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Background: Labor provides several responses that result in the expulsion of the fetus and placenta. The role of the physiotherapist aims to rescue autonomy in the delivery process, providing comfort and self-confidence.
Objectives: To describe the evolution of physiotherapeutic care over 8 years in a maternity hospital with usual risk, as well as to identify the general obstetric characteristics of the women assisted in these years.
Methods: Descriptive study, consulting the database of maternity hospital with usual risk in Marília-SP, from January 2011 to December 2018. The data collected were physiotherapy care; resources used; way of delivery; labor induction; duration of labor; interventions during vaginal delivery. The analysis was descriptive, using mean, absolute and relative frequency.
Results: 9893 medical records of women hospitalized during the collection period were analyzed, totaling the number of research participants. The average number of physical therapy care per year was 4784. In 2011, a total of 5095 sessions were made, in 2012, 5451, in 2013, 4000, in 2014, 5555, in 2015, 5567, in 2016, 4362, in 2017, 4362, and in 2018, 3874 physiotherapeutic consultations. Of the resources used during physiotherapeutic care, those most frequently used were a shower, being used in 3296 (68.9%) cases, walking in 3157 (66%), therapeutic ball 3123 (65.3%) and breathing exercises 2521 (52.7%). Between 2011 and 2014, the most used resources were, on average: shower bath (77.6%), walking (69.4%), therapeutic ball (68.1%) and breathing exercises (21.8 %). Between 2015 and 2018, on average, they were: breathing exercises (87.3%), walking (64.2%), therapeutic ball (62.7%) and showering (58.6%). As for the total number of medical records evaluated, in relation to obstetric characteristics, it was observed that 6232 (63%) evolved to vaginal deliveries and 3660 (37%) evolved to cesarean deliveries. Regarding induction, 6430 (65%) received medication. The duration of labor prevailed from 1h to 6h in 64% of the total. Episiotomy was performed in 2866 (46%) of the vaginal deliveries, 1433 (23%) of the deliveries were without any intervention, and grade I lacerations accounted for 1308 (21%).
Conclusion: Physiotherapeutic care was not performed in most parturients, considering the average number of visits over the years. There was a variation in the number of physical therapy visits between years, with a gradual decrease from 2016 to 2018. The most used resources were showering, walking, therapeutic ball and breathing exercises, and over the years, there was a reversal in the frequency of use of these resources.
Implications: This descriptive study brought an exploratory overview of the physiotherapy service in a public maternity hospital at usual risk, demonstrating the number of consultations over the years and the most used practices. Complementary, in-depth, and analytical studies are suggested, so that more specific aspects can be verified, meeting the strengthening of physiotherapeutic practices in hospital obstetrics, as well as raising awareness of the importance of the physical therapist being inserted in the labor process in a way systematic.
Keywords: Physiotherapy, Maternity, Labor

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Ethics committee approval: Research Ethics Committee of the Faculty of Philosophy and Science (FFC) UNESP Campus Marília (Process Number: 1898/2010).

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FACTORS ASSOCIATED WITH RESPIRATORY MUSCLE STRENGTH AMONG COMMUNITY-DWELLING OLDER ADULTS IN THE AMAZON REGION: A CROSS-SECTIONAL STUDY

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Background: The increase in life expectancy has exposed the population to greater intrinsic and extrinsic factors that affect the whole organism and that can influence the respiratory function of the elderly, which is already suffering from aging-related alterations. Changes such as replacement of muscle fibers by fat and increased rib cage rigidity affect the function of respiratory muscles, leading to strength deficit, represented by decreased values of maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP), which may reflect in dyspnea and fatigue.
Objective: To analyze the factors associated (sociodemographic characteristics, lifestyle habits, and health conditions) with respiratory muscle strength (RMS) among community-dwelling older adults.
Methods: Cross-sectional, population-based study conducted among community-dwelling elderly residents in the urban area in the municipality of Macapá-AP. The associated factors evaluated were sociodemographic characteristics (structured questionnaire with information about sex, age, education, individual income and housing), lifestyle habits (self-report of smoking; and level of physical activity - through the International Physical Activity Questionnaire-IPAQ) and health conditions (body mass index; self-report of hospital admissions and falls in the last 12 months; associated diseases; medication use; self-perception of health; depressive symptoms - measured by the Geriatric Depression Scale; functional capacity - using the Katz Scale and the Lawton and Brody instrument; and physical performance through the Short Physical Performance Battery). The MIP and MEP were evaluated by means of manovacuometry. Factors associated with RMS were identified by means of multivariable analysis in the multiple linear regression model, considering a significance level of 5%.
Results: A total of 383 elderly people with a mean age of 70.01 (SD$\pm$7.3) years participated in the study, 251 being female (65.5%) and 132 male (34.5%). The adjusted linear regression model analysis pointed out that being female and having advanced age were associated with lower values of both MIP (β= -0.330; p= $<$0.001 and β= -0.150; p= 0.003, respectively) and MEP (β= -0.410; p= $<$0.001 and β= -0.190; p= $<$0.001, respectively). Elderly insufficiently active (β= -0.120; p= 0.008), with lower BMI values (β= 0.140; p= 0.002) and worse physical performance (β= 0.120; p= 0.020) showed association with lower MIP values and those less independent were associated with lower MEP values (β= -0.130; p= 0.005).
Conclusion: Older age and being female, insufficiently active, poorer physical performance, having a lower BMI value, and being less independent were factors associated with RMS in community-dwelling elderly.
Implications: The identification of factors that are associated with RMS in the elderly population enables health professionals to promote actions to change lifestyle habits, such as physical exercise, as well as to improve health conditions during the aging process, because our results demonstrated that these factors could bring impairment to respiratory function in community-dwelling elderly.

Keywords: Aged, Risk Factors, Maximum Respiratory Pressures

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Universidade Federal do Amapá, protocol no. 1.738.671.

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EFFECTIVENESS OF AEROBIC EXERCISE ON THE FUNCTIONALITY AND QUALITY OF LIFE OF CHILDREN WITH CEREBRAL PALSY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: The main alterations associated with cerebral palsy (CP) include impairments in body functions and structures, activity limitations and participation restrictions. Thus, the health of individuals with CP can be affected in all domains of the International Classification of Functioning, Disability and Health (ICF). Aerobic exercise showed beneficial results for this population. Most studies report its benefits on body structures and functions; however, the results regarding activity and participation are less explored. The literature does not have comprehensive systematic reviews addressing the benefits of aerobic exercise for individuals with CP in the three domains of the ICF.
Objective: To investigate the effectiveness of aerobic exercise on the functionality of children and adolescents with (CP). The effectiveness of aerobic exercise on quality of life (QoL) was verified secondarily.
Methods: A systematic review with meta-analysis was conducted, taking into account the recommendations of the Report Items Referenced for Systematic Reviews and Meta-analyses (PRISMA) statement. An extensive search for articles was carried out in the electronic databases PubMed, PEDro, Embase and CINAHL. This systematic review was registered in the PROSPERO International Prospective Registry (nr. CRD42021251361). The methodological quality and certainty of the evidence were assessed using the PEDro and GRADE scales (Evaluation Rating, Development and Evaluation of Recommendations). The effects of aerobic exercise were investigated with meta-analytical techniques.
Results: 15 randomized controlled clinical trials (RCTs) were included, with 414 participants. As for the methodological quality, a low risk of bias was revealed. Aerobic exercise was effective in improving aerobic capacity (standardized mean difference [SMD] = 0.81; 95% confidence interval [CI] = 0.16−1.47; $p < 0.002$; I2 = 68%), gross motor function (SMD = 0.70; 95% = CI 0.21−1.19; p = 0.005; I2 = 49%), mobility (SMD = 0.53; 95% CI = 0.05−1.05; p = 0.03; I2 = 27%), balance ($p < 0.05$), and participation (SMD = 0.74; 95% CI = 0.10−1.39; p = 0.02; I2 = 0%). Aerobic exercise did not prove to be more effective in terms of muscle strength, spasticity, gait parameters and QoL ($p > 0.05$). The certainty of evidence for most comparisons was moderate to low.
Conclusion: The results show that aerobic exercise improves aerobic capacity, gross motor function, mobility, balance, and participation, but it did not show significant effects on muscle strength, spasticity, gait parameters and quality of life. The certainty of the evidence was moderate to low. Given the small sample size, heterogeneity may be underestimated, leading to uncertainties regarding effect estimates. New RCTs involving larger samples are needed for definitive conclusions to be reached.
Implications: Clinicians should cautiously replicate this intervention, as new studies with larger sample sizes and quality must be conducted.
Keywords: Cerebral palsy, Aerobic exercise, Randomized controlled clinical trial

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THE EFFECTS OF RESISTANCE EXERCISE AND ELECTROSTIMULATION ON PELVIC FLOOR STRENGTHENING IN PATIENTS WITH PROSTATE CANCER

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Background: The literature on exercise linked to electrical stimulation of the upper pelvic floor muscles in the treatment of urinary incontinence after radical prostatectomy is scarce and reports different techniques for the treatment of urinary incontinence. In this context of care for cancer patients, functional exercises and electrostimulation can act as additional therapies. Studies show positive effects of functional pelvic floor training in patients with urinary incontinence after prostate surgery. In addition, as a second treatment option is electrostimulation that can be used together with functional training or separately (LATORRE, 2020). Electrostimulation facilitates the contraction of the periurethral striated muscles by inhibiting the detrusor muscle and activating the sphincter (KAKIHARA CT, 2007). The structure that maintains urinary continence is the external urinary sphincter, urinary incontinence is a consequence of sphincter injuries of the less favorable urethrovesical junction to maintain urinary continence, generating greater demand for the external urethral sphincter. To improve the effectiveness of the urethral sphincter, physical therapy treatment is recommended, which includes pelvic muscle training; functional electrostimulation together with indo-anal electrode; the two methods can be executed together or separately (KAKIHARA CT, 2007).
Objectives: To verify the effects of resistance exercise and electrical stimulation on clinical outcomes and quality of life of cancer patients undergoing prostatectomy.
Methods: The present study sought to analyze scientific articles based on a systematic literature review. The research focused on analyzing articles that addressed the terms involved in the construction of the study. They were consulted in the electronic databases SciElo, PubMed, Cochrane, Bvs for selection and review of articles originally published in English and Portuguese.
Results: Twenty published studies were summarized. Most studies demonstrate physiological and quality of life benefits. However, most of these studies have limitations because they are not randomized clinical trials or use small samples.

Conclusion: This initial evidence involving a small sample size suggests that properly applied, designed, and supervised resistance exercise may be safe and well tolerated by patients with prostate cancer and may lead to improvements in physical function, physical activity levels, and weight gain. muscle mass. Future trials involving larger samples are needed to expand on these preliminary findings.
Implications: Future trials involving larger samples are needed to expand on these preliminary findings. Knowing that the planned exercise has benefits in the quality of life of these patients.
Keywords: Resistance exercise, Cancer, Electrostimulation

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IDENTIFICATION OF DEMOGRAPHIC, CLINICAL AND PSYCHOLOGICAL PREDICTORS IN RELATION TO KINESIOPHOBIA OF PATIENTS IN THE POST-OPERATIVE MUSCULOSKELETAL TRAUMA

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Background: Musculoskeletal injuries affect a large part of the population and result from numerous causes. These individuals may develop kinesiophobia, leading to avoidance of body movements and physical activities because of pain, believing that this behavior can prevent the worsening of their condition or cause a new problem. Kinesiophobia can have a significant impact on an individual's quality of life, both physical and mental health.
Objectives: Investigate the demographic, clinical and psychological predictors of kinesiophobia in patients after musculoskeletal trauma to the upper and lower limbs.
Methods: The study carried out with individuals after immediate musculoskeletal traumatic injuries in the Orthopedics and Traumatology Ward of HC/UFTM. We collect demographic data such as: age, gender, dominance and profession; clinical data, such as: pain intensity, pain categorization, type of surgical treatment, cause of injury, side of injury and body segment; and psychological data, such as: depression, anxiety, pain catastrophizing and kinesiophobia. Variables associated with kinesiophobia were analyzed using a multivariate linear regression model.
Results: 88 individuals were included, 73.9% male and 26.1% female. The multivariate linear regression model that showed statistical significance with the highest R2 value (R2 = 0.383; adjusted R2 0.312) considering kinesiophobia as a dependent variable included nine independent variables: surgical treatment, affected side, dominance, anxiety and depression, affected segment, gender, pain intensity, cause of injury and pain catastrophizing. In this model, the predictive variables that showed statistical significance were: anxiety and depression (p = 0.255; β = 0.050), female gender (p = -0.191; β = 0.048) and pain catastrophizing (p = 0.350; β = 0.010).
Conclusion: Among the studied predictors, we believe that female gender, pain catastrophizing and higher levels of anxiety and depression are important predictors of kinesiophobia in patients after musculoskeletal trauma in the upper and lower limbs.
Implications: We believe that health professionals who deal with musculoskeletal trauma patients are aware of the variables that can predict kinesiophobia, as well as use these assessment tools to help patients with their fear and movement avoidance behaviors.
Keywords: Predictors, Kinesiophobia, Musculoskeletal trauma

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CORRELATION BETWEEN SENSORY AND MUSCULAR FUNCTIONS OF THE PELVIC FLOOR AND URINARY INCONTINENCE IN YOUNG NULIPAROUS WOMEN

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Background: The functionality of the pelvic floor musculature (PFM) assists in the support of pelvic organs as well as provides urinary, fecal continence and sexual functions within normal limits. For the PFM to be considered functional, it is necessary that strength, resistance, relaxation capacity, superficial sensitivity, tonus, and proprioception are present in a harmonious way. Changes in one or more of these components can trigger, for example, urinary incontinence (UI).
Objectives: To Identify the sensory and muscle functions of the pelvic floor and UI and their correlations in young nulliparous women.
Methods: A descriptive, observational, and cross-sectional study was carried out. The sampling process was of the convenience type, with women aged between 18 and 30 years old, nulliparous, who had never been pregnant and who were not menstruating on the day of the assessment selected. The evaluation was carried out through the application of questionnaires (socio-clinical questionnaire, International Consultation on Incontinence Questionnaire-Short Form) and, later, by physical examination evaluating the superficial sensitivity, the tonus of the perineal body, tonus of the external anal sphincter and strength of MAP through the Perfect scheme. Data were analyzed using the Statistical Program for Social Sciences (version 23) considering a significance level of 5%.
Results: The sample consisted of 45 women with a mean age of 22.18 $\pm$ 3.15 years. The prevalence of UI was 31.11%, with the majority referring a feeling of incomplete emptying and 17.77% referring a situation of urinary urgency. The entire sample showed normal sensitivity. Changes in perineal body and external anal sphincter tone were observed in 26.6% and 15.5%, respectively. The group with UI showed more muscle weakness (p=0.04) and less ability to repeat PFM contractions (p=0.02). There was a correlation between PFM functions and the presence of UI in the components of muscle strength (R=-0.78), maintenance of muscle contraction capacity (R=-0.60), repetition potential (R=-0.65) and presence of contraction of the lower abdominal muscles (R=0.55).
Conclusion: UI is directly related to muscle weakness, difficulty maintaining the contraction, lack of ability to repeat PFM

contractions and the presence of co-contraction of lower abdominal muscles.
Implications: In scientific terms, it was shown that, in terms of MAP, for the development of UI, muscle strength is not a single factor to be considered, considering the importance of other parameters. In clinical terms, this study underscores the importance of considering motor, but also sensory, aspects when evaluating PFM functionality.
Keywords: Women's health, Pelvic diaphragm, Urinary incontinence

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: (COMEP/ UNICENTRO) under opinion nº. 5.299.509.

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ASSOCIATION BETWEEN BASELINE DYSPNEA AND PHYSICAL ACTIVITY LEVEL IN COPD PATIENTS AFTER A PULMONARY REHABILITATION PROGRAM

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Background: Pulmonary rehabilitation (PR) programs play a key role in reducing the sensation of dyspnea, improving exercise capacity, physical activity level and quality of life in patients with different severity of COPD. However, it is still uncertain whether there is an association between dyspnea and the level of physical activity in these individuals, as patients with different pre-RP baseline dyspnea scores may have different responses in the level of physical activity after PR.
Objective: to verify whether there is an association between the sensation of dyspnea and the level of physical activity in response to a PR program in patients with COPD.
Methods: This is a retrospective observational study, which evaluated 22 patients diagnosed with COPD, who participated in a PR program for 8 weeks, and had an FEV1/FVC ratio $<$70%, both genders, mean age of 67 $\pm$SD years, post-bronchodilator FEV1 (48$\pm$12%). For pre- and post-PR evaluation of dyspnea sensation, the mMRC scale (Medical Research Council), distance covered by the 6-minute walk test (DPTC6) and the level of physical activity through the activPAL3TM actigraph (Pal technologies Ltd. United Kingdom), for 7 consecutive days. The physical activity level variables analyzed were time in lying/sitting, standing, and walking positions; number of steps, and time spent at certain exercise intensities (sedentary, when METS$<$1.5 and light exercise, when MET $<$1.5 but $<$3). Those patients who could not perform the proposed tests and/or had difficulty understanding the scale were excluded. For correlation analysis and linear regression of the data, the statistical software SPSS v21(2012) was used, with significance of $p<0.05$.
Results: A high negative correlation was found between mMRCpre and DPTC6 (r=-0.769; p=0.000), as well as a moderate negative correlation with the number of steps (r= -0.678; p =0.001), walking time (r= - 663 ; p= 0.001) and METS($>$ 1.5 to 3.0). Regarding mMRC and sitting/lying time, there was a moderate positive correlation (r=0.546; p= 0.009). It was found in the simple linear regression analysis between mMRC with 6MWT (r^2 =0.529), with the number of steps (r^2 =0.451), with walking time (r^2=0.463) and with MET $>$ 1.5 to 3.0 (r^2= 0.519).
Conclusion: it is concluded that the pre-intervention mMRC can explain the exercise capacity and the level of physical activity after PR, and more symptomatic patients reached lower exercise capacity and less time in light and moderate physical activity intensities.
Implications: This study has the clinical implications that when prescribing a PR program for patients with more symptomatic COPD, greater attention is given to these patients so that there is an improvement in exercise capacity and physical activity level.
Keywords: COPD, Physical activity, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
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QUALITY OF LIFE OF WOMEN IN THE THIRD TRIMESTER OF PREGNANCY

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Background: Quality of life is closely related to sociodemographic and environmental factors, living conditions and social relationships. Pregnancy is a period of adaptations and physical and emotional changes for women, which can affect their quality of life, especially in the third trimester of pregnancy, when most of the physical changes occur and delivery is approaching. The evaluation of this health indicator is important so that the physiotherapist can know where to act and what to offer for the health of the pregnant woman.
Objectives: To describe the quality of life of pregnant women in the third trimester of pregnancy.
Methods: This work comprises preliminary data from a cross-sectional observational study, with a sample composed of 24 women in the third trimester of normal-risk pregnancy, with a mean age of 29.33$\pm$3.897 years and who had lower limb edema. Quality of life was assessed using the Ferrans and Powers Quality of Life Index, adapted for pregnant women by Fernandes, Narchi and Cianciarullo. This instrument consists of 36 items divided into four domains, namely: health and functioning (16 items); family (4 items); social and economic (9 items); and psychological/spiritual (7 items). The score can vary between 0 and 30 points, with higher scores indicating better quality of life.
Results: The sample was characterized by being mostly married (79.2%), primiparous (70.8%), with planned pregnancy (47.1%) and complaint of lower limb edema (100%). The mean score for overall quality of life was 21.70$\pm$3.627, with a minimum score of 14.79 and a maximum score of 28.76. Only one of the pregnant women scored less than 15 points in quality of life, showing that most have a quality of life ranging from fair to good. The family domain obtained the highest average score (25.37$\pm$3.59), followed by the psychological/spiritual (23.25$\pm$4.56) and social/economic (22.30$\pm$4.00) domains. Health and functioning had the lowest score among the four (19.07$\pm$4.34), which points to how much physical changes during pregnancy can affect quality of life in the third trimester. Another piece of data that corroborates this observation is that item 7 (energy for everyday activities), within that same domain, had the lowest score in the sample.

Conclusion: For the characteristics of this preliminary sample of pregnant women in the third trimester, it was observed that pregnancy had a low impact on quality of life in general, with a greater decline in the health and functioning domain. It is necessary to expand the sample and correlate these data with their sociodemographic characteristics.
Implications: The results demonstrate the importance of the physiotherapist in relieving the physical symptoms of women in the third trimester of pregnancy, in order to increase their quality of life, and to guarantee that this period is lived in the best possible way.
Keywords: Pregnant, Quality of life, Edema

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IMPACT OF MOTOR FUNCTION OF INDIVIDUALS WITH SPINAL MUSCULAR AMYOTROPHY AND OVERLOAD OF THEIR CAREGIVERS ON QUALITY OF LIFE

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Background: Spinal Muscular Atrophy (SMA) is a progressive degenerative neuromuscular disease that can cause several motor, respiratory, and functional impairments, directly interfering with the quality of life (QoL). Depending on the severity of the SMA, the individual may need intermittent care and their caregivers may feel overwhelmed with this responsibility.
Objectives: To correlate caregiver burden and motor function measurement (MFM) of individuals with SMA with their QoL.
Methods: Descriptive cross-sectional study, carried out in a state rehabilitation center in Goiânia, Goiás, Brazil. Data collection was carried out from March to July 2022, consisting of individuals diagnosed with SMA types I, II, and III being followed up at the institution's Neuromuscular Diseases Clinic and their main family caregivers. To analyze the MFM, participants younger than six years old were evaluated using the Motor Function Measurement Scale - Short Version (MFM-20), and those older than six years old using the Motor Function Measurement Scale (MFM-32). For QoL assessment, those over five years old answered the PedsQL Neuromuscular 3.0 questionnaire according to age group, while those under five years old had the same questionnaire answered by their guardians. To assess caregiver burden, the Burden Interview questionnaire was used. The distribution of demographic profile and clinical data was tested according to the type of SMA by applying Pearson's Chi-square test and "Post hoc" standardized residual analysis. The QoL, MFM, and caregiver burden were tested between the types of EBF using the Analysis of Covariance (ANCOVA), controlling the effect of variables that presented $p < 0.05$ in the initial exploratory analyses. The significance level adopted was $p < 0.05$.
Results: The sample consisted of 32 individuals with SMA, 6(18.7%) type I, 9(28.1%) type II, and 17(53.1%) type III, with a mean age of 21.9± 17.3 years old, mostly male 17(53.1%) and 27 caregivers, 26 (96.3%) females. The MFM showed a moderate positive correlation with the QoL of individuals with SMA type II ($r = 0.71$; $p = 0.05$) and in type III it had a strong positive correlation with statistical significance ($r = 0.63$; $p = 0.01$). Caregiver burden had a negative correlation with QoL in SMA types II and III ($r = -0.71$; $p = 0.05$ and $r = -0.16$; $p = 0.63$, respectively), without statistical significance.
Conclusion: MFM correlated with the QoL of individuals with SMA, especially type III. The burden of caregivers showed a negative relationship with the QoL of people with SMA, highlighting the need for care for this population.
Implications: Knowledge of the motor function of individuals with SMA and the burden of their caregivers are important aspects that allow for more specific therapeutic approaches according to their individualities.
Keywords: Quality of life, Spinal Muscular Atrophy, Caregivers

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FUNCTIONAL HEALTH LITERACY OF PEOPLE WITH SPINAL CORD INJURY IN REHABILITATION

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Background: Spinal cord injury (SCI) represents a public health problem due to the sequelae it causes, leading to physical dependence and functional disability. The acquisition of knowledge and the learning of skills are considered important aspects in the rehabilitation process of these people and are directly related to functional health literacy (FHL). The FHL refers to the understanding of information on health risks and the use of health services, including information leaflets, booklets, and health education. The person with SCI faces multiple barriers and experiences health disparities, but few studies have investigated the FHL of this population in rehabilitation.
Objectives: To evaluate the functional health literacy of people with spinal cord injury in rehabilitation.
Methods: Quantitative and cross-sectional study conducted in a state rehabilitation center in Goiânia, Goiás, Brazil. The data collection took place between October 2021 and January 2022. The sample was composed of individuals diagnosed with SCI older than 18 years who attended the adult neurofunctional physiotherapy outpatient clinic of the institution. The Short Test of Functional Health Literacy in Adults (S-TOFHLA), electronic medical records were used to fill out the clinical profile form, and a questionnaire for sociodemographic characterization. Data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 26.0.
Results: We evaluated 85 individuals diagnosed with SCI, 22 females (25.9%) and 63 males (74.1%). Regarding the classification of the injury, most participants (42.4%) were classified as "A" on the American Impairment Scale (AIS) and presented paraplegia (65.8%), with

a mean injury time of 55.5 months and rehabilitation time of 38 months. The average score on the S-TOFHLA was 79.5 points out of a total of 100 points. It was found that 60 individuals (70.6%) presented adequate FHL, followed by 13 with borderline FHL (15.3%) and 12 with inadequate FHL (14.1%).
Conclusion: The individuals with SCI evaluated presented mostly adequate FHL, so the rehabilitation process may have been a contributing factor to the outcome of FHL.
Implications: Rehabilitation allows greater exposure to health information, better organization, management capacity and knowledge of the disease, and thus could contribute to better outcomes of FHL. The evaluation of FHL by multidisciplinary teams during the rehabilitation process can be an important tool for improving the health of people with SCI.
Keywords: Spinal cord injury, Functional health literacy, Rehabilitation

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INFLUENCE OF SOCIAL ISOLATION CAUSED BY COVID-19 IN ELDERLY PEOPLE HOSPITALIZATION ASSOCIATED WITH FALLS IN AN EMERGENCY HOSPITAL

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Background: In 2020, isolation and social distancing measures were taken to contain the new coronavirus, which affected the elderly people's routine improving the susceptibility to trauma in their homes due to the increase in immobility associated with physical activities reduction, which maintains their physical conditioning, and the unsafe home structure.
Objectives: This study aims to compare the profile of hospitalizations due to falls that occurred in 2019, before the pandemic, with those of 2020 in the context of social isolation in an Emergency Hospital from Porto Alegre.
Methods: The authors performed a retrospective observational study. The patient's electronic medical records data were used. Patients of both sexes, over 60 years old, who were admitted to the hospital due to falls during 2019 and 2020 were included to compare both periods. In addition to the sample characterization, information about the type of trauma, type of injury or fracture generated, place where the trauma occurred, month of the year, patient's death, and previous comorbidities were also transmitted.
Results: 485 individuals were included, primarily women (71.3%) over 80 years old (36.9%) who avoided falling from their height (76.8%) and had as a consequence the proximal fracture of the hip (2019: 56.7%; 2020: 57.9%) in their homes (92.4%) in both years. There were more emergency discharges in 2019 (2019: 26.8%; 2020: 14.2%) and more transfers in 2020 (2019: 60.7%; 2020: 70.1%). As for seasonality, there were more falls in the months corresponding to winter in 2019 (p=0.004), while in 2020 the distribution was observed throughout the year. The sample characterization data are consistent with other findings in the literature. The injuries in 2020 were more serious, requiring surgical intervention at another hospital.
Conclusion: Although there are similarities in the profile of patients in 2019 and 2020, we can highlight that isolation due to the new coronavirus may have resulted in trauma with more severe injuries compared to the previous year. During the pandemic year, there was a homogeneous distribution of the occurrence of falls, which suggests staying at home is an important risk factor for trauma in the elderly.
Implications: The results of this abstract showed that social isolation harmed the severity of falls, suggesting that staying at home may be a risk factor for them. To make the home environment safer and the adoption of home exercises that maintain the physical conditioning of this population can be adopted to improve the quality of life.
Keywords: Fall accidents, Elderly, Social Isolation, COVID-19

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Acknowledgment: Not applicable.
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FATIGUE AND ASPECTS OF MENTAL HEALTH WOMEN, WITH AND WITHOUT RHEUMATIC DISEASES DURING THE COVID-19 PANDEMIC

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Background: The COVID-19 pandemic has generated changes across the world, one of which is social distancing. Even with some impacts still unknown, studies have been pointing to damage to the health of several populations. In this sense, the consequences resulting from the pandemic can be identified in the female population, especially in those with rheumatic diseases, since people with chronic diseases had a worse state of general health and well-being, in addition to the difficulty in maintaining therapeutic follow-up during the pandemic and a possible exacerbating effect of their symptoms.
Objectives: The aim of this study was to evaluate fatigue and mental health aspects (depression, anxiety, and depression and anxiety together) in women with rheumatic diseases and without rheumatic diseases in the period of the COVID-19 pandemic.
Methods: This is a longitudinal observational study carried out in 2020 and 2021 using an online questionnaire. The study included women with and without rheumatic diseases, aged 18 to 65 years, Brazilians who were residing in Brazil. These should respond to an online questionnaire on the Google Forms platform, which included the Fatigue Severity Scale and the Hospital Depression and Anxiety Scale. Data were analyzed descriptively. The groups were compared using the Chi-square test (categorical variables) and the Mann Whitney test (quantitative variables with non-normal distribution in the Kolmogorov Smirnov test). For the intragroup analysis with rheumatic diseases, the chi-square test was used. All analyzes were performed using IBM SPSS software, version 25.0, adopting a significance level of 5%.

Results: Six hundred and fifty women (n= 400 SDR; n= 250 CDR) participated in the study. The group with rheumatic diseases had worse results in fatigue and mental health outcomes (anxiety, depression and associated anxiety and depression) when compared to the group without this condition ($p<0.01$). Among the group of women with rheumatic diseases, fibromyalgia was the disease that presented the worst results for the outcomes of mental health aspects ($p<0.01$).
Conclusion: During the COVID-19 pandemic in Brazil, women with rheumatic diseases experienced symptoms of fatigue and compromised aspects of mental health when compared to women without this condition. Among those who had some disease, women with fibromyalgia were the most affected in the period evaluated.
Implications: The study demonstrates the need for intervention programs focused on biopsychosocial aspects and the search for self-management strategies in the CDR population. These strategies could aim to minimize the impacts arising from future emergency public health situations, causing managers to promote public policies of comprehensive health care, including the physiotherapy professional to integrate more multidisciplinary teams with a focus on multiple health areas of individuals with chronic illnesses.
Keywords: Rheumatology, Public health, Women's health

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FEASIBILITY STUDY OF THE ASSOCIATION OF PHOTOBIOMODULATION THERAPY WITH EXERCISE IN INDIVIDUALS WITH CHRONIC AND NON-SPECIFIC LOW BACK PAIN

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Background: Chronic Non-specific Low Back Pain (CNSLBP) is considered an unknown-origin pain or discomfort in the lower back, persistent for a period equal or higher than 12 weeks. Although it is commonly prescribed, exercises alone seem to be less effective than associated with other modalities for the CNSLBP treatment. Thus, guidelines recommend a combination of interventions. Photobiomodulation Therapy (PBMT) is an effective method for alleviating CNSLBP. Thought, the scientific evidence about the effectives of laser PBMT combined with exercise is scarce and contradictory.
Objective: to evaluate the feasibility of carrying out a study of PBMT combined with exercise in individuals with CNSLBP.
Methods: 36 participants with CNSLBP aged between 18 to 65 years old were selected. Participants were randomly allocated in (1) a six-week exercise program matched with active PBMT (n = 18) and (2) a six-week exercise program matched with placebo PBMT (n = 18). The clinical outcomes were measured at baseline, as well as 8 and 20 weeks after randomization. The primary outcomes were the feasibility of blinding patient, measuring patient's treatment satisfaction, the patient's difficulty in understanding past information, the occurrence of adverse effects, and patient adherence to treatment, evaluated using an adapted model of MedRisk Instrument for Measuring Patient Satisfaction with Physical Therapy Care Questionnaire.
Results: blinding of the patients was possible, since 75% believe they used the active PBMT and 25% the placebo PBMT. Adherence to all meetings was 76.92%, requiring monitoring of the procedures. 87.5% of the patients are totally satisfied with the treatment received. 54.2% of the patients reported that was very easy to understand the given commands and 41.7% stated that was easy and 4.1% that was neither, nor easy or difficult to understand and no patient reported the occurrence of adverse effects during the interventions.
Conclusion: based on the results, it is possible to conclude that is feasible to carry out a treatment protocol using PBMT associated with exercise in individuals with CNSLBP.
Implications: the findings will help to determine the additional effect of PBMT to an exercise protocol on CNSLBP, potentially guiding clinical practice by providing an alternative method of therapy.
Keywords: Exercise, Backache, Photobiomodulation

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CARDIOVASCULAR FITNESS IS CORRELATED WITH SPATIAL WORKING MEMORY IN OLDER ADULTS

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Background: Age-related cognitive decline in spatial working memory occours on aging. Working memory requires manipulation and retention of visuospatial information (Spatial Working Memory - SWM) and it has been shown that higher levels of cardiorespiratory fitness are associated with more accurate and faster spatial memory responses in older people. Walked distance in the 6-minute walk test (6MWT) is considered an adequate indirect measure of the physical and cardiorespiratory capacity of older adults, both in clinical and academic environments. Considering that higher levels of cardiorespiratory fitness may be associated with better cognitive performance, we investigated the relationship between this construct and the working memory of older adults.
Objectives: To analyze whether cardiovascular fitness is correlated to spatial working memory performance in a sample of older adults.
Methods: Participants over 60 years old were invited to the study. All participants performed an indirect assessment of cardiovascular fitness (6MWT), considering the distance walked and the average speed during the test. The cognitive assessment included the Mini-Mental State Examination (MMSE) and working memory through the measurement of total errors (SWM TE) by automated testing of the Cambridge Battery of Automated Neuropsychological Tests (CANTAB). After searching for and removing outliers values and analyzing

normality (Shapiro-Wilk), the Spearman test was performed. The significance level was set at $p \leq 0.05$. SPSS 20.0 software was used.
Results: One hundred and forty-eight older adults (female: 120) participated. Participants were 70.2 (±5.967) years old and had 9.31 (±4.136) years of schooling. All participants performed within normal scores adjusted for schooling on the MMSE. The results indicated a negative correlation between performance in the SWM TE and the distance walked in the 6MWT ($\rho = -0.166$; $p \leq 0.047$), and between performance in the SWE TE and the average speed in the test ($\rho = -0.164$; $p \leq 0.05$).
Conclusion: Our results indicate that better cardiovascular fitness is correlated with fewer errors in the assessment of spatial working memory in older adults.
Implications: The 6MWT can be performed in clinical settings due to its low cost, easy application and reliable replication rates. Its use for monitoring health conditions, treatment and prevention strategies can be important as objective measures dedicated to minimizing age-related cognitive decline.
Keywords: Cardiovascular Fitness, Spatial Working Memory, Aging

Conflict of interest: The authors declare no conflict of interest.
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FUNCTION OF PELVIC FLOOR MUSCLES, FUNCTIONAL CAPACITY, QUALITY OF LIFE AND SEXUAL FUNCTION IN WOMEN WITH BREAST CANCER

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Background: Breast cancer is a pathology with heterogeneous characteristics, with wide variation in terms of its morphological nature and unpredictable clinical responses. Despite increasing the chances of cure and survival, the therapeutic approaches indicated for its treatment, such as breast removal surgery, chemotherapy, radiotherapy, and hormone therapy, weaken the woman's body and directly impact her quality of life.
Objectives: Thus, this study aimed to analyze the function of the pelvic floor muscles in women who survived breast cancer and compare them to healthy women, as well as to compare their functional capacity, quality of life and sexual function.
Methods: 40 women were recruited, equally, divided into two groups: Group of Women with Breast Cancer (GMC, from the Hospital do Câncer Alfredo Abrão de Campo Grande-MS) and Group of Healthy Women (GMS, from the Clínica UFMS Integrated School). All participants were submitted to the following evaluations: sociodemographic and clinical information questionnaire; 6-Minute Walk Test (6MWT); Sit and Reach Test (SAT); handgrip dynamometry; Female Sexual Function Index (FSFI) questionnaire; PERFECT scheme and pelvic floor manometry. The GMC participants also answered two specific questionnaires for cancer patients (Quality of Life Questionnaire - QLQ C30, Quality of Life Breast Cancer - QLQ BR23).
Results: The statistical analysis showed a significant difference between the functional capacity tests in the 6MWT ($p < 0.01$), in the TSA ($p < 0.01$) and dynamometry (p 0.012 for the right hand and p 0.003 for the left hand), in addition to the FSFI questionnaire, scheme PERFECT and manometry ($p < 0.001$).
Conclusion: The results of this study suggest that among women with breast cancer, sexual dysfunctions and losses related to functional abilities are common, especially in the strength of contraction of the pelvic floor muscles, aspects related to desire and sexual satisfaction.
Implications: Even with the constant technological advances of low, medium and high complexity related to the treatment and cure of cancer, women survivors can experience sequelae of a physical and emotional nature, reflected in their function of the pelvic floor muscles, functional capacity, quality of life and sexual function, which can last for long periods or for a lifetime. Especially pelvic floor disorders, little studied in the literature and neglected by health professionals, as it is not considered a fatal problem for the health of patients. Physical therapy proves to be an important ally in this scenario, contributing to the integration of sociodemographic and clinical data of the participants for a better understanding of the factors that most impact the quality of life of women who had breast cancer.
Keywords: Pelvic floor disorders, Physical-functional performance, Breast neoplasms

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PERCEPTIONS OF INDIVIDUALS WITH PARKINSON'S DISEASE ABOUT SLEEP: A QUALITATIVE ANALYSIS

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Background: Among the non-motor symptoms in Parkinson's disease (PD), sleep disturbances stand out, which can affect up to 90% of these individuals. Sleep plays a role in memory consolidation, learning, and refinement of procedural skills, and thus, alterations negatively impact the quality of life of the PD population. Physiotherapy promotes deeper sleep, reduces awakenings and wakefulness periods, improving objective and subjective perceptions of sleep.
Objectives: To understand the perception of individuals with PD regarding sleep disturbances.
Methods: Descriptive-analytical qualitative study, with recorded telephone interviews. The questions addressed the sleep disturbances perceived by individuals with PD, perceptions about the consequences of sleep deprivation, and aspects involving physiotherapy and sleep. Individuals with PD who were regular attendees of a specialized physiotherapy group for at least 2 years of both sexes, without communication difficulties, and available to discuss the interview topic were included. The recorded statements were transcribed, considered individually, divided into units of meaning, categorized, and analyzed based on the principles of phenomenology.
Results: The sample size was ten individuals with PD. The qualitative analysis revealed four themes that formed the structure of the

phenomenon based on the experiences of individuals with PD: 1) Individuals with PD's perspective on their sleep; 2) Life impacts sleep quality and sleep influences quality of life; 3) Physiotherapy and sleep in individuals with PD; 4) Expectations and desires of individuals with PD regarding sleep.
Conclusion: The main sleep disturbances perceived by people with PD are hallucinations, vivid dreams, insomnia, and restless leg syndrome, which can cause feelings of worry and anxiety. The lack of quality sleep affects interpersonal relationships, cognitive aspects, the individual's disposition for daily tasks, and social participation. People with PD highlighted the beneficial sensations perceived when they undergo physiotherapy and mentioned the desire to sleep through the night without interruptions so that they can make better use of their day.
Implications: Considering the sleep disturbances experienced by people with PD, as well as the perceived consequences on quality of life, interpersonal relationships, and social participation, physiotherapy, and the need for health education on this topic stand out.
Keywords: Parkinson's Disease, Sleep, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
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CORRELATION BETWEEN FUNCTIONAL MOBILITY AND MENTAL HEALTH OF ACTIVE OLDER PEOPLE AFTER 18 MONTHS OF DETRAINING DUE TO COVID-19 PANDEMIC

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Background: Physical detraining is the partial or total interruption of a physical exercise program, and it results in partial or total loss of acquired benefits, generating physiological adaptations in older people. In the context of the social restrictions imposed by the covid-19 pandemic, physical detraining may have resulted in a decline in the functional mobility and mental health of this population.
Objectives: To verify the correlation between functional mobility and mental health of active older people after 18 months of physical detraining due to the covid-19 pandemic.
Methods: This is a longitudinal study. The participants of the study were older people considered active for practicing a regular multicomponent physical exercise program (MPE) and in a group for at least one year, before being interrupted due to the covid-19 pandemic. The program had a weekly frequency of three times a week, with sessions of 50 minutes each. The physical assessments were carried out in three moments, being T1: before the pandemic (March 2020), T2: after 18 months of the beginning of the pandemic (August 2021) and T3: after 24 months of the pandemic and return to face-to-face activities (February 2022). The functional mobility assessment was done by "Timed Up and Go – TUG" test and it was carried out in the three moments, while the mental health assessment was done using two components: depressive symptoms from the "Geriatric Depression Scale - GDS" and perceived stress by the "Perceived Stress Scale - PSS", being performed only at T2. Statistical analysis was performed using the SPSS 20 software with a significance level of $p < 0.05$, after verifying the normality of the data, the Friedman test was performed to compare functional mobility and the correlation with mental health was performed using the test of Spearman with delta values between the first 18 months of the pandemic (T2-T1).
Results: forty-six older people (74 ± 6.67 age and 87% female) participated in the three moments. There was a significant worsening of functional mobility performance between T1 and T2 (8.29 [7.57-9.38] and 9.34 [8.53-10.96]), reflecting the effect of 18 months of detraining. Regarding the correlation with mental health, a positive correlation was observed with GDS (p=0,015; r=0,414) and PSS (p=0,047; r=0,377). Thus, the longer time spent performing the TUG was associated with a higher presence of depressive symptoms and perceived stress in the 18 months of the pandemic.
Conclusion: The pandemic had negative effects on functional mobility that lasted even after 18 months of its beginning, and worst functional mobility was correlated with worsening mental health.
Implications: With the end of the pandemic, the resumption of physical exercise programs for the older people is important, so that there is a recovery of functional mobility, but it is also necessary that these programs also pay attention to mental health issues in this population.
Keywords: Functional mobility, Mental health, Older adults

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TRANSLATION AND VALIDATION OF THE ROTTERDAM TRANSITION PROFILE TO BRAZILIAN PORTUGUESE

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Background: Recently, individuals with cerebral palsy (CP) have been reaching adulthood in greater proportions, making it relevant to understand the process of transition to adulthood, as well as the levels of autonomy in participation (AIP) of adolescents and young people with CP, which is little explored due to the lack of appropriate instruments, mainly for the Brazilian population. In this sense, the Rotterdam Transition Profile (RTP) is an instrument used to categorize AIP levels.
Objectives: This study aimed to translate and validate the RTP construct and content for use in Brazil.
Methods: The study's translation and validation process followed the methodology and sample size established and recommended by the literature. The translation was performed by 3 professionals fluent in English and the version obtained in Portuguese was back translated into English, to be reviewed by the authors of the instrument. The construct validity of the RTP was investigated by a panel of 8 professionals, who received an online form containing

instructions and the translated version of the RTP. At the end of this stage, 30 young adults aged between 13 and 35 years (mean=25; SD=6.9 years), diagnosed with CP and with a good cognitive level, provided data for content validation, in addition to sociodemographic information.
Results: After two rounds of review with the authors, the final version translated into Portuguese was obtained and construct validity was established with agreement among professionals to change 3 items of the instrument. Content validity was demonstrated with suggestions for additional modifications to 2 of the same 3 items also pointed out during construct validity. In the end, changes were made to items 1 (education and employment) and 8 (care demands). The internal consistency analysis was considered good (Cronbach's alpha 0.820).
Conclusion: The Brazilian Portuguese version of the RTP was considered adequate and clear.
Implications: The instrument will support transition planning for person-centered care, highlighting the strengths and challenges faced by young people with CP during the transition to adulthood.
Keywords: Cerebral palsy, Evaluation instrument, Measurement properties

Conflict of interest: The authors declare no conflict of interest.
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INSPIRATORY MUSCLE STRENGTH AS A PROTECTIVE FACTOR FOR MORTALITY IN PATIENTS WITH HEART FAILURE

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Background: Chronic heart failure (HF) is commonly associated with inspiratory muscle weakness (IMW). However, few studies have investigated risk factors for IMW in patients with HF and systolic dysfunction (left ventricular ejection fraction (LVEF) $\leq$ 40%).
Objectives: This longitudinal study aimed to: (1) analyze whether clinical factors, functional capacity measures, and biomarkers of inflammatory and cardiovascular disease were associated with IMW in patients with HF; (2) to analyze associations between IMW, functional capacity and the outcome death in 36 months of follow-up.
Methods: This longitudinal study. Patients with HF, NYHA functional class I-II-III, LVEF $\leq$ 40% consecutively recruited at a referral cardiac tertiary center were evaluated. At baseline, we evaluated patients regarding clinical data, smoking history, peripheral muscle strength using a dynamometer, functional capacity using the six-minute walk test (6MWT) and treadmill cardiopulmonary test (CPT), quality of life using the Minnesota Living with Heart Failure (MLHF) questionnaire and plasma levels of cardiovascular biomarkers. Through analysis of medical records and phone calls, we followed these patients for 36 months for the main outcome, death. Statistical analysis compared the survivor and death groups using the Wilcoxon test for continuous variables and Fisher's exact test was used for categorical variables. To identify predictors of mortality in these patients, a logistic regression was performed. P values $<$0.05 were considered significant.
Results: Sixty-nine patients were evaluated. They had 58 $\pm$ 10 years, LVEF 30 $\pm$ 7% and 71% were male. Six patients died during the 36-month follow-up. Compared with survivors, patients in the death group had lower predicted inspiratory muscle pressure (IMP) (80 $\pm$23 vs 57$\pm$22%, p= 0.015), lower oxygen consumption (VO_2) at the point of respiratory compensation (20 $\pm$ 5 vs 15 $\pm$ 1 mL/Kg/min, p= 0.020), higher troponin I plasmatic values (453 (244-596) vs 804 (674-1085) pg/mL, p= 0.022), higher Galectin-3 plasmatic values (1168 (806-2092) vs 2756 (2021-6514), p=0.020) and worse quality of life according to the MLHF (p=0.048). Most patients in the death group had IMW (83%), with a significant difference (p=0.018) compared to the survivor group, in which only 31% of patients had IMW. Predicted IMP was the only protective predictor of mortality in these patients (OR 0.958 (0.920 to 0.998), p=0.027).
Conclusions: Predicted IMP proved to be an independent protective predictor of mortality in patients with HF and reduced LVEF.
Implications: In physiotherapeutic care for patients with HF and reduced LVEF, the assessment of inspiratory muscle strength and identification of IMW is an important measure to guide conducts and identify the severity of patients.
Keywords: Heart failure, Inspiratory muscle weakness, Functional capacity

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CORRELATION BETWEEN OCCUPATIONAL PROFILE, ABSENTEEISM AND WORK ACCIDENTS IN MUSCLE, SYNOVIA AND TENSION DISORDERS

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Background: Absenteeism and accidents at work are considered a public health problem due to the socioeconomic and functional repercussions imposed on the worker and the country. The characteristics of the work environment can increase occupational risks and, consequently, the incidence of work absenteeism and accidents.
Objective: To identify which occupational characteristics are associated with absenteeism and work accidents in work-related muscle, synovial, and tendon disorders.
Methods: We performed an observational study. We obtained the data through the National System of Medical Assistance - SINAM (DATASUS) considering the notifications resulting from muscle disorders (M60-M63), synovial and tendon disorders (M65-M68) in Brazil between the 2006 and 2022 years. The analyzes correlated absenteeism and work accidents with the occupational profile, with the following variables: (1) repetitive movements; (2) stressful environment; (3) time for breaks; (4) working hours longer than 6h/day; and (5) more than one employment relationship. We assessed the normality of all variables using the Shapiro-Wilk test. In the absence of normal distribution, we used the Spearman Correlation test. All

analyzes were performed using the R Core Team software, considering an $\alpha \leq 0.05$.
Results: Absenteeism were associated with a stressful environment ($r^2 = 0.953$, p-value = 0.000), time taken for breaks ($r^2 = 0.866$, p-value = 0.000), working hours longer than 6h/day ($r^2 = 0.627$, p-value = 0.007) and more than one employment relationship ($r^2 = 0.948$, p-value = 0.000). Similarly, work accidents had a statistically significant association with the stressful environment ($r^2 = 0.928$, p-value = 0.000), time of breaks ($r^2 = 0.846$, p-value = 0.000), working hours greater than 6h/day ($r^2 = 0.606$, p-value = 0.009) and more than one employment relationship ($r^2 = 0.939$, p-value = 0.000). On the other hand, there was no statistically significant correlation between repetitive movements and absenteeism ($r^2 = -0.051$, p-value = 0.846) or work accidents ($r^2 = -0.153$, p-value = 0.558), demonstrating that, despite the studied population being workers with musculoskeletal disorders, repetitive movements did not influence cases of absenteeism and work accidents. Furthermore, absenteeism and work accidents were significantly associated ($r^2 = 0.981$, p-value = 0.000) showing that these workers may be more susceptible to this type of injury.
Conclusion: Stressful environments, working hours longer than 6h/day, time for breaks and more than one employment relationship had a greater impact on absenteeism and accidents at work in cases of muscle, synovial and tendon disorders reported in Brazil compared to the variable "repetitive movements".
Implications: This study provides insight for future investigations. In contrast to expectations, the stressful environment was the variable best correlated with absenteeism and work accidents in Brazilian workers with musculoskeletal disorders. Therefore, it is pertinent to continue this investigation to understand how the stressful environment, and other variables analyzed, had repercussions on absenteeism and accidents of workers diagnosed with musculoskeletal disorders related to work.
Keywords: Cumulative trauma disorders, Occupational risks, Occupational accidents

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EFFECT OF MUSCLE STRENGTHENING AND AEROBIC EXERCISE ON PAIN, MUSCLE STRENGTH AND PHYSICAL PERFORMANCE OF INDIVIDUALS WITH KNEE OSTEOARTHRITIS

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Background: For the treatment of individuals with knee osteoarthritis (KOA), the American College of Rheumatology recommends conservative modalities and, among them, are muscle strengthening (MS) and aerobic exercise (AE), the latter usually associated with MS, which makes it difficult to know what the effective contribution of AE is to this population. In addition, psychological factors are also important to be considered for KOA and how much they influence physical performance and symptom improvement is still uncertain.
Objectives: To evaluate and compare MS and AE protocols on intensity and pain awareness, muscle strength, self-reported and objective physical performance in individuals with KOA, considering the influence of age, BMI and psychological factors.
Methods: Ninety-eight individuals (mean $\pm$ SD = 63.2 $\pm$ 8.4 years, 72 women) with KOA participated in the study. Three protocols were performed over an 8-week period, 3 times a week. 1) MS protocol: It consisted of strengthening the hip abductor muscles, quadriceps and tibialis anterior, through 4 sets of 6 repetitions; 2) AE Protocol: It consisted of 40 minutes of ergometric bicycle, in which the individual should maintain the range of 50-70% of the maximum heart rate; 3) Control Protocol (CT): It consisted of education through a booklet and 60-minute lectures on the characteristics of KOA and execution of part of the physiotherapeutic protocol to be carried out at home. The main assessment measures were Numerical Pain Scale (NPS), Pressure Pain Threshold (PPT), Beck Depression Inventory (BDI), Pain Catastrophizing Scale (PCS), Western Ontario and McMaster Universities Osteoarthritis Questionnaire (WOMAC), Isometric Muscle Strength and Gait Speed.
Results: The MS and AE protocols produced a positive short-term effect on pain intensity and sensitization, muscle strength, self-reported and objective physical performance, even when considering the influence of age, BMI and psychological factors. However, the MS protocol proved to be more effective than the AE and CT protocol for pain intensity, in addition to increasing tibialis anterior (TA), quadriceps (QD) and hip abductor (ABD) muscle strength. Peripheral and central sensitization decreased after MS, AE and CT protocols, however, there was no significant difference between groups. Likewise, self-reported physical performance increased after MS, AE and CT interventions, however, there was no significant difference between groups. As for the objective physical performance variables, both the MS group and the AE group increased the comfortable speed (CS), slow speed (SS) and fast speed (FS) compared to the CT group.
Conclusion: MS is the most effective protocol to improve the symptoms of individuals with KOA when compared to AE and CT, even when considering the influence of age, BMI and psychological factors.
Implications: This study reveals that muscle strengthening was more effective when compared to aerobic exercise in improving the symptoms of knee osteoarthritis.
Keywords: Knee osteoarthritis, Muscle strengthening, Aerobic exercise

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RELATIONSHIP BETWEEN PSYCHOLOGICAL FACTORS AND PHYSICAL PERFORMANCE IN INDIVIDUALS WITH KNEE OSTEOARTHRITIS

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Background: In recent years, with the increased understanding of chronic disease processes such as knee osteoarthritis (KOA), the biopsychosocial approach has received emphasis as a form of treatment for these diseases. In this approach, many factors can influence the individual's physical performance, such as demographic, anthropometric, and psychological factors. However, the significant association of psychological factors with physical performance is still uncertain, as psychological factors are significantly associated both with self-reported and objective physical performance and with pain, the latter being also a determinant of low self-reported and objective physical performance.
Objectives: To examine whether psychological aspects predict low self-reported and objective physical performance in individuals with KOA, considering the effect of age, body mass index and pain.
Methods: Ninety-eight individuals (mean $\pm$ SD = 63.2 $\pm$ 8.4 years, 72 women) with KOA participated in the study. Eligibility criteria for participation in the study were age over 50 years, knee pain for more than six months, and diagnosis of KOA according to the American College of Rheumatology criteria. The diagnosis should be accompanied by radiological evidence, affecting one or more compartments of the knee, at a mild, moderate or severe level, being unilateral or bilateral according to the Kellgren and Lawrence criteria. In addition, they should also present a level $\geq$3 of pain. The main assessment measures were Numerical Pain Scale, Pressure Pain Threshold, Beck Depression Inventory (BDI), Pain Catastrophizing Scale (PCS), Western Ontario and McMaster Universities Osteoarthritis Questionnaire (WOMAC) and Gait Speed.
Results: The different regression models revealed that the pain dimension of the WOMAC was the most significant measure of pain intensity to predict poor physical performance. Furthermore, it has been demonstrated that pain catastrophizing (PCS) is the most significant psychological measure to predict low self-reported physical performance and depressive symptoms (BDI) to predict low objective physical performance.
Conclusion: There is an association between psychological factors, pain, and physical performance in individuals with KOA, with pain catastrophizing being the psychological measure best predicting low self-reported physical performance, whereas depressive symptoms predict low objective physical performance.
Implications: Bearing in mind that psychological factors have a significant influence on the symptomatology of individuals with KOA, mainly regarding pain and physical performance, this study reveals the need for a psychosocial approach in the clinical management of the disease.
Keywords: Knee osteoarthritis, Psychological factors, Physical performance

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ASSOCIATED FACTORS TO KINESIOPHOBIA AFTER UPPER LIMB MUSCULOSKELETAL TRAUMA

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Background: Psychosocial factors have been associated with the magnitude of long-term upper limb disability in individuals with upper limb injuries, however, the association between these factors in acute trauma, especially in the upper limb, has been poorly investigated.
Objectives: To analyze the association between kinesiophobia and sleep quality, pain catastrophizing, shoulder movement avoidance and hospital anxiety and depression in patients who suffered musculoskeletal trauma to the upper limb.
Methods: This cross-sectional study included a sample of 35 patients of both sexes, aged over 18 years who were admitted to the Orthopedics and Traumatology ward of the Hospital de Clínicas of the Federal University of Triângulo Mineiro (UFTM) due to acute musculoskeletal trauma in the upper limb. The following variables were used in the study: Tampa Kinesiophobia Scale, Visual Numerical Pain Scale, Catastrophic Thoughts About Pain Scale, Avoidance Daily Activities Photo Scale (ADAP Shoulder Scale), The Pittsburgh Sleep Quality Index (PSQI), Hospital Anxiety and Depression Scale (HADS). Pearson's correlation analysis was used to verify the association between TAMPA kinesiophobia questionnaire scores and the variables pain intensity, pain catastrophizing, shoulder movement avoidance behavior, sleep quality, and anxiety and depression.
Results: The 35 patients involved had a mean age of 48 years, the majority being male (68.6%), with right dominance (97.1%) and in 42% of cases, the affected side was the dominant side. The main causes of musculoskeletal trauma were: traffic accident (40%), work accident (25.7%), domestic accident (25.7%), sports accident (n=2.9%) and violence (n= 5.7%). Kinesiophobia assessed by the TAMPA questionnaire showed a significant correlation with hospital anxiety and depression ($r = 0.71$; $p < 0.001$); with pain catastrophizing ($r = 0.58$; $p < 0.001$) and with sleep quality according to the questionnaire ($r = 0.55$; $p = 0.001$). On the other hand, kinesiophobia according to TAMPA did not correlate with pain intensity ($r = -0.04$; $p = 0.838$), as well as it did not correlate with the avoidance behavior of shoulder movements ($r = 0.64$; $p = 0.724$).
Conclusion: Kinesiophobia in patients with musculoskeletal trauma to the upper limb was associated with anxiety and depression, pain catastrophizing and sleep quality, but not with pain intensity and movement avoidance behavior.
Implications: This work suggests that health professionals who deal with musculoskeletal trauma patients in the hospital environment are aware of these variables and their associations, as well as use these tools in order to better understand and act in the face of fear and avoidance behaviors in the upper limb.
Keywords: Kinesiophobia, Pain catastrophizing, Trauma, Upper limb

Conflict of interest: The authors declare no conflict of interest.
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SHOULDER MUSCLE STRENGTH AND AVOIDANCE BEHAVIOR IN PEOPLE WITH CHRONIC SHOULDER PAIN

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Background: Individuals with chronic shoulder pain have decreased muscle strength and range of motion, in addition to movement avoidance beliefs that may compromise functionality. Literature demonstrates a slight correlation between avoidance beliefs and shoulder dysfunction assessed through specific reliable questionnaires, but to our knowledge, no analysis has been performed with biomechanical parameters such as muscle strength with a gold standard equipment.
Objectives: To analyze whether there is a correlation between muscle strength of external and internal rotators of the shoulder and avoidance behavior in individuals with chronic shoulder pain.
Methods: Forty-four individuals with chronic shoulder pain were evaluated (14 men and 30 women with a mean age of 46±11 years, BMI of 29±6 kg/m2 and pain intensity of 5±3 on the Visual Analog Scale). Those over 55 years old, with difficulties in understanding the questionnaires, previous surgery and fracture, presence of tumor and neurological disorders were excluded. The Visual Analogue Scale (0-10) was applied to assess pain intensity. The Avoidance Daily Activities Photo (ADAP) Shoulder Scale was applied to analyze movement avoidance behavior. ADAP has three domains: free movement, effort and self-care. Then, the individuals were seated on the isokinetic dynamometer (Biodex 4). Muscle strength of external and internal rotators of the shoulder was assessed using three concentric isokinetic contractions with verbal feedback for encouragement. A warm-up test was previously performed with three submaximal contractions. Stabilization was performed using belts in the pelvic and thoracic region. The arm position was 45° of elevation in the scapular plane and 90° of elbow flexion, complete range of motion of 60° (30° of internal rotation and 30° of external rotation) with a speed of 60°/s.
Results: Spearman's correlation analysis resulted in a weak negative correlation between muscle strength in external rotation and the ADAP Effort domain (rho=-0.3; p= 0.014) and between muscle strength in internal rotation and the ADAP Effort domain (rho=-0.3; p=0.042).
Conclusion: There is a weak negative correlation between shoulder rotator muscle strength and the ADAP effort domain scale, thus, people with chronic shoulder pain who have less strength demonstrate greater avoidance behavior in relation to effort activities.
Implications: This study showed that individuals with chronic shoulder pain and decreased muscle strength of shoulder rotators may exhibit movement avoidance behavior. It is important for the clinician to assess these determinants to propose a treatment that includes muscle strength and exposure strategies to movements that involve effort in individuals with chronic shoulder pain.
Keywords: Shoulder pain, Fear of movement, Muscle strength

Conflict of interest: The authors declare no conflict of interest.
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EFFICACY OF TELEREHABILITATION EXERCISE IN PATIENTS WITH CHRONIC NECK PAIN: A PROTOCOL FOR A RANDOMIZED CONTROLLED TRIAL

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Background: Neck pain is the third musculoskeletal condition that causes the most days lived with disability and is considered an important public health problem with a significant economic impact, decreased productivity and work absenteeism. In addition to pain, these individuals also present psychosocial symptoms such as kinesiophobia, catastrophizing, anxiety, and depression. Although exercise is an effective approach in the treatment of chronic neck pain, physiotherapists face barriers to the success of therapy, such as lack of patient adherence. Additionally, due to costs, distance and lack of adequate information, patients do not have access to physiotherapy treatment. Therefore, telerehabilitation is an emerging tool to overcome these barriers. However, despite the literature supporting the effectiveness of telerehabilitation in chronic musculoskeletal conditions, there are no studies on its efficacy in neck pain regarding pain, disability and psychosocial symptoms when compared to face-to-face treatment.
Objectives: To investigate the efficacy of a telerehabilitation exercise program compared to face-to-face exercise program in patients with chronic neck pain.
Methods: The study is a single-blinded randomized controlled trial. Ninety-eight individuals of both sexes, between 18-65 years old, with non-specific neck pain lasting longer than 3 months will be recruited. They will be randomly allocated to one of two groups (telerehabilitation and face-to-face). The telerehabilitation group will perform the intervention at home through videos sent beforehand and weekly call will be made to follow-up the participants. The face-to-face group will perform the intervention with the therapist. The primary outcomes will be pain intensity and disability. Secondary outcomes will be kinesiophobia, catastrophizing, fear avoidance beliefs, symptoms of anxiety and depression, pain self-efficacy and global perceived effect. All participants will be evaluated before and after treatment. Both groups will perform the same exercise protocol, twice a week for six weeks. The protocol consists of 8 exercises (two stretching exercises, two mobility exercises and four strengthening exercises) with an approximate duration of 40 minutes and these will be progressed every two weeks. The statistical analysis will follow the principles of intention-to-treat analysis and the effects of treatment will be calculated using mixed linear models, using interactions terms (group versus time interactions).

Conclusion: This is the first study to investigate whether an exercise program applied via telerehabilitation is effective in reducing pain, disability, and psychosocial symptoms in individuals with chronic neck pain when compared to the same exercise program applied face-to-face.
Implications: The results of this study may contribute to a better understanding of the efficacy of telerehabilitation in biopsychosocial outcomes, as well as support future remote intervention research to reduce physical, temporal, financial and treatment adherence barriers that professionals face. In addition, remote treatment may also be able to reduce waiting lists and public spending on chronic neck pain.
Keywords: Neck Pain, Telerehabilitation, Therapeutic Exercise

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QUANTITATIVE SENSORY TESTS AS OUTCOME OF CLINICAL TRIALS WITH THERAPEUTIC EXERCISES FOR CHRONIC NECK PAIN: A SCOPING REVIEW

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Background: As the ninth most cause of disability health condition among women, chronic neck pain can also alter pain processing. These individuals have local and remote hyperalgesia, higher temporal summation (TS) and lower efficiency in conditioned pain modulation (CPM), reinforcing the need to evaluate these outcomes since they are predictors of poor prognosis (greater pain and disability). Quantitative sensory tests (QST) represent an important tool in assessing the processing of sensory stimuli. In addition, therapeutic exercise is consolidated as the first line of treatment, capable of modulating neurophysiological responses to pain. Given the prognostic potential of QSTs and that they can be altered by exercise, it is necessary to investigate how they are used in the literature as well as the existing gaps in their use, to provide relevant information for researchers and clinicians to improve their prescription of therapeutic exercises for this population.
Objectives: To synthesize the evidence on the use of QSTs as outcome of interventions with therapeutic exercises in chronic neck pain.
Methods: A scoping review that followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses for Scoping Reviews (PRISMAScR) guidelines and was filed with PROSPERO (CRD42022298811). PubMed, EMBASE, CINAHL, PEDro, SportDiscus and CENTRAL databases were consulted until December 2021. Titles, abstracts, and full text were independently selected by two researchers. Randomized clinical trials of non-specific chronic neck pain that used therapeutic exercise as one of the interventions were included. Data on location, year of publication, participants, outcomes, evaluated points and methodologies were extracted.
Results: 2909 articles were found. Of these, 27 articles were included with a total of 1585 participants (97% women). Studies were concentrated in the Nordic countries (40%) and Spain (25%) and the majority (14 articles) were published from 2015 onwards, which demonstrates a growing interest in the area in the last decade. Pressure pain threshold (PPT) was the most evaluated outcome (100% of the studies), however thermal pain threshold, vibratory threshold, TS and CPM were evaluated in only 1 study each. The most evaluated local points were the upper trapezius muscle (74%) and scapula elevator (29%); and remotely, the tibialis anterior (29%). Regarding the methodology, the PPT is more standardized in the literature, using the average of 3 measurements for the analyses.
Conclusion: The use of QSts in clinical trials in the field of neck pain is still very limited and little explored, but an increase in publications has been observed in recent years. Furthermore, only the PPT was better investigated with an established methodology, highlighting the gap with other QSTs.
Implications: This scope review carried out a relevant survey of the literature considering neck pain as an important public health problem and the influence of pain processing on chronification processes and success of interventions with exercise therapies. More studies on this review topic are still needed to improve the understanding of pain processing when an individual is submitted to therapeutic exercises.
Keywords: Neck pain, Exercise Therapy, Hyperalgesia

Conflict of interest: The authors declare no conflict of interest.
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EVALUATION OF RANGE OF MOTION AND MUSCLE STRENGTH OF THE ANKLE OF CLASSICAL DANCERS FROM CURITIBA

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Background: Classical ballet requires high performance and technical level in anti-anatomical positions, inducing misalignment of joint structures. Classical dance requires intense and hard training and aims to achieve perfection, disregarding factors such as age or individual characteristics. The masterful execution of several steps of classical ballet demands the use of muscle strength to sustain the movement in large amplitudes. However, the uneven muscle activation during the ballet performances increases muscle disequilibrium and the risk of injury.
Objectives: We aimed to evaluate the range of motion and muscle strength of the ankle of classical ballet dancers from Curitiba.
Methods: This cross-sectional study included women aged 20 to 29 years, who live in Curitiba and have been practicing classical ballet for at least one year. Measurement of ankle dorsiflexion, plantar flexion, inversion and eversion amplitudes was assessed by a goniometer. Isometric strength of the ankle dorsiflexors, plantar flexors, inverters and evertors was measured using a Lafayette manual dynamometer. The values found in this study were compared with the literature.
Results: Nine dancers with an average of 22.3±1.32 years and 11± 5.29 years of practice of classical ballet were evaluated. The plantar flexion movement presented range of motion values 40% greater than those previously reported in the literature. For ankle eversion, the values found were 38% higher. The results of the ankle

dorsiflexion and inversion range of motion were close to those described in studies that evaluated adult women. In muscle strength findings, the ballet dancers showed a significant reduction of up to 50% in ankle dorsiflexors, inverters and evertors. However, an increase of 97.96% was observed in the muscle strength of the plantar flexors compared to the values described in the literature.
Conclusion: The ballet dancers showed above-average range of motion values for plantar flexion and eversion movements and muscle strength for plantar flexors muscles. However, in the other evaluations, the results were similar or lower than those reported in the literature for range of motion and muscle strength.
Implications: Describing the changes in the range of motion and muscle strength of the dancers improves the knowledge of the relationship between the performance and the physical characteristics of the participants. Thus, they can understand the functioning of their body structure and map the risk of injuries, improving the execution of the dance.
Keywords: Classical ballet, Range of motion, Muscle strength

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Ethics committee approval: 52719921.0.0000.0102

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ACUTE EFFECT OF WHOLE-BODY PHOTOBIOMODULATION ON AGILITY TEST IN TRAINED AND HEALTHY INDIVIDUALS: PRELIMINARY STUDY

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Background: Whole-body photobiomodulation (PBM) emitted by LEDs (Light-Emitting Diodes) has been applied for sports performance. However, there are no studies with the use of whole-body PBM in trained and healthy individuals with performance evaluation in an agility test (Illinois Agility Test).
Objectives: To evaluate the effects of whole-body PBM on the performance of trained and healthy individuals through the agility test.
Methods: Randomized, double-blind, crossover and placebo-controlled clinical trial with 10 young (22.60±3.27 years) trained (33.6±7 months of resistance training) and healthy (25. 42±2.13 kg/m^2), randomly allocated into two crossed arms: effective PBM (13.85J/cm^2; 46.17mW/cm^2) and placebo PBM (0J; 0mW), applied according to randomization. Participants received both treatments, with a 7-day washout between each therapy. The effective PBM was applied for 10 minutes, respecting a time of 6 hours and 5 minutes before the assessment of the agility test (2 sessions of irradiation). The agility test was performed according to its validation, which consisted of an area of 4 external cones (9.2 m long and 3.6 m wide) and 4 internal cones (3.1 m apart). Before starting the official test, a familiarization was performed (2 attempts). Thus, the participants were instructed to perform 3 maximum running attempts (180 seconds of rest between them) running from the starting line (1st cone to 2nd cone - 9.2 m), deviating from 4 central cones (twice) and a distance of 9.2 m to the finish line. The evaluations were carried out in three moments [baseline (BL) – 1st day; Effective PBM or placebo, according to randomization at the time of 24h-post BL; and after 7 days of washout]. The evaluations were standardized in the same period of the day and place of the BL. Data were analyzed for normality using the Kolmogorov-Smirnov test. For comparison purposes, the paired t test, mean, standard deviation and 95% confidence interval (CI) were used, considering a significance level of 5%.
Results: On average, there was no significant difference (p=0.963) between effective PBM [0.01±0.73; t(9) = -0.048, 95% CI -0.53 to 0.51] and placebo PBM. The time in seconds was lower in effective PBM [0.37±0.43; t(9) = 2.753, p=0.022, 95% CI 0.06 to 0.69] compared to BL. There was no significant difference for placebo PBM [0.36±0.55; t(9) = 2.095, p=0.066, 95% CI -0.02 to 0.76] compared to BL.
Conclusion: Whole-body PBM was not able to increase agility test performance (Illinois Agility Test) in trained and healthy individuals. However, is a preliminary study, there is a need for a larger sample size (n=40, calculated by paired t-test, two-tailed, considering a mean effect of 0.5, α of 5% and statistical power=80%) to clarify the results.
Implications: Although the findings do not confirm the hypothesis, it is necessary to investigate the use of whole-body photobiomodulation in trained people to improve performance in agility tests, as it is an innovative resource that could benefit the sports and/or clinical environment.
Keywords: Low-level Light Therapy, Running, Physical Functional Performance

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CLINICAL CHARACTERISTICS OF INDIVIDUALS WITH TRAUMATIC PATELLOFEMORAL PAIN: A CROSS-SECTIONAL STUDY

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Background: Patellofemoral pain (PFP) is defined as retro- or peripatellar pain, exacerbated by activities that overload the patellofemoral joint. PFP is one of the most common musculoskeletal disorders of the lower limbs and is associated with several clinical alterations (e.g., reduced subjective function, quality of life and knee muscle strength). The development of PFP is commonly associated with an insidious onset. However, recent evidence demonstrates a high prevalence of PFP after traumas to the knee joint (e.g., injuries and/or surgery). Seven out of 10 individuals report symptoms of PFP after traumas to the knee. Nevertheless, most studies are carried out in individuals with insidious PFP, whereas little is known about which alterations may be present in individuals with PFP of traumatic origin; and even if they are the same as those presented by individuals with insidious PFP.
Objective: To compare clinical features of individuals with traumatic, insidious PFP and asymptomatic individuals with or without a history of knee trauma.
Methods: Thirty-nine subjects with traumatic PFP, 38 subjects with insidious PFP, 40 asymptomatic subjects with no history of trauma, and 18 asymptomatic subjects with a history of trauma aged 18 to 35 years were enrolled (Ethics Committee Number: 5,110,075). Variables of interest included duration of symptoms, worst level of pain

in the last month (VAS), subjective function (AKPS), quality of life (SF-36), and maximum isometric strength of knee extensors and flexors (isokinetic dynamometer) at 60° of knee flexion. A multivariate analysis of covariance (ANCOVA) was used to compare the groups, controlling for the influence of sex on the dependent variables.
Results: The traumatic PFP group had worse pain levels (95%CI=.65; 18.92) and lower levels of subjective function (95%CI=-12.01; -4.17) compared to the insidious PFP group. The groups with traumatic and insidious PFP had lower subjective function compared to the asymptomatic groups with (95%CI=-27.65; -19.62 | -19.84; -11.23) and without trauma (95%CI=-26. 37; -15.52 | -18.49; -7.21), respectively. The traumatic PFP group had lower knee extensor strength compared to the asymptomatic group with trauma (95%CI=-67.26; -3.02) and without trauma (95%CI=-52.76; -3.59) in the knee, while there was a trend towards the insidious PFP group (95%CI=-51.25; .67). There were no differences between groups for duration of symptoms, quality of life, and isometric knee flexor strength.
Conclusion: Individuals with traumatic PFP have a worse perception of their clinical condition (e.g., worse level of pain and subjective function) compared to individuals with insidious PFP, and lower strength of the knee extensors when compared to asymptomatic individuals with and without a history of trauma to the knee. In general, these findings may indicate a cumulative effect of knee trauma and PFP, which could affect the individual's perception of their condition.
Implications: It is possible that individuals with traumatic PFP could benefit from specialized education interventions regarding the perception of their condition, whereas there does not seem to be necessary to give greater emphasis to knee strengthening for this subgroup.
Keywords: Anterior knee pain, Traumatic injury, Weakness

Conflict of interest: The authors declare no conflict of interest.
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ISOKINETIC EVALUATION OF MUSCULAR STRENGTH AFTER DIFFERENT ISCHEMIC PRECONDITIONING PRESSURES: A PLACEBO-CONTROLLED RANDOMIZED CLINICAL TRIAL

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Background: Ischemic preconditioning (IPC) is characterized as a procedure consisting of intermittent applications of cycles of non-lethal and short-duration vascular occlusion in a target limb, followed by reperfusion through inflation and deflation of a pressure cuff. Because it is a method of easy administration, usability, non-invasive, and low cost, it currently presents as an attractive ergogenic resource that has been used for performance enhancement. Despite its notoriety in the literature in recent years, there are gaps regarding the most efficient protocol to be used to obtain significant results, especially for increasing muscular strength.
Objectives: to compare the effect of different IPC occlusion pressures on muscular strength through maximum voluntary isometric contraction (MVIC).
Methods: eighty healthy men (22.10±2.86 years) were randomly divided into four groups: IPC using total occlusion pressure (TOP) [IPC-TOP], IPC with 40% more than TOP (IPC-40%), placebo (10 mmHg), and control. The IPC protocol used consisted of four cycles of ischemia and reperfusion of five minutes each, totaling 40 minutes, while the placebo underwent an intervention like IPC but with four cycles of five minutes of placebo occlusion (10mmHg) alternated with four cycles of five minutes of reperfusion (0 mmHg). In the control group, individuals remained at rest for 40 minutes. Initially, TOP evaluation was performed, followed by baseline evaluation of MVIC on an isokinetic dynamometer. Next, participants underwent the previously randomized intervention protocol. Finally, MVIC evaluation was performed again. Descriptive statistical methods and analysis of variance for repeated measures were used with a significance level of 5%.
Results: all analyzed groups showed a significant difference in the final evaluation compared to the baseline ($p<0.05$), where the levels of muscular strength decreased. Regarding the magnitude of the losses, it was observed that the IPC-40% group (Δ = -14.01Nm) presented the lowest reduction, which was statistically significant compared to the control, placebo, and IPC-TOP groups (Δ = -29.46Nm; -32.71Nm and -26.44Nm, respectively).
Conclusion: IPC with 40% more than the TOP was able to attenuate the reduction of muscular strength evaluated by the MVIC.
Implications: the present study brings important results providing an alternative technique that can be used in training and competition routines to minimize the loss of muscular strength.
Keywords: Vascular occlusion, Muscular strength, Functional physical performance

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: The study was approved by the Research Ethics Committee of FCT/UNESP, Presidente Prudente, SP, Brazil (CAAE: 30765020.3.0000.5402).

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EFFECTIVENESS OF IMPLEMENTATION STRATEGIES TO REDUCE THE PROPORTION OF LOW-COST CARE FOR LOW-BACK PAIN MANAGEMENT: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Background: Low back pain (LBP) is the most common occupational disorder in North America. In the period from 2012 to 2016, indirect costs were US$2.2 billion for LBP in Brazil, accounting for approximately 67% of medical expenses. Previously published studies lacked major interventions, requiring further research to improve the

evidence. Findings from this review can raise awareness among clinicians and promote significant savings if they follow clinical guidelines.
Objectives: To investigate the effectiveness of implementation strategies to reduce the proportion of low-value care and increase the proportion of high-value care in the management of low back pain.
Methods: This review was registered to the to the Open Science Framework (OSF) (https://osf.io/7jfpr/). Searches were performed in the following electronic databases: MEDLINE, Embase, CINAHL and Cochrane Library. Two independent reviewers performed study selection, data extraction and risk of bias assessment. Clinical trials investigating the effect of evidence-in-practice implementation strategies on reducing low-value care and promoting low-value care were included. Studies including adults with non-specific LBP were considered eligible. The primary outcome of this systematic review was outcomes related to the practices of health professionals. However, the primary outcomes were determined considering two recent clinical care standards. Meta-analyses were calculated using random effect models, the risk of bias by the Cochrane Risk of Bias Tool and the overall quality of evidence was assessed using the Grading of Recommendations, Assessment, Development and Evaluations (GRADE).
Results: Thirty-two articles were included. Interventions focusing on implementing clinical guidelines were not effective in referral to specialists (5 studies, n=6223; RR=0.88; 95% CI: 0.62, 1.25), referral to physical therapists (3 studies, n=7937; RR=1.42 ; 95% CI: 0.74, 2.72) or for prescribing non-opioid drugs (6 studies, n=7297; RR = 0.75, 95% CI: 0.52, 1.10) when compared to the control group. However, the implementation of clinical guidelines was effective in reducing the number of imaging requests (12 studies, n= 44,689; RR = 0.83, 95% CI: 0.70, 0.99), opioid prescription (5 studies, n=6681; RR = 0.60, 95% CI: 0.44, 0.80), and promote active approaches (exercise, counseling, etc.) (6 studies, n=2553; RR = 1.36, 95% CI: 1.04, 1.76). Confidence of all meta-analyses was low, as most studies were assessed at high risk of bias because they were not randomized clinical trials and because of serious inconsistency ($I^2 > 50\%$).
Conclusion: Although clinical guidelines are important to improve the quality of care for people with LBP, it is not always effective in clinical practice. The quality of evidence found was low. Better quality studies are still needed to confirm these findings.
Implications: Clinical guidelines are important tools that are effective in reducing imaging, prescribing opioids and promoting active approaches and were ineffective for referrals and prescribing non-opioids.
Keywords: Low back Pain, Practice Guideline, Lumbago, Systematic Review

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Ethics committee approval: Not applicable.

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COMPARISON BETWEEN PHYSICAL PERFORMANCE TESTS IN CROSSFIT PRACTITIONERS WITH AND WITHOUT SUBACROMIAL PAIN SYNDROME: A CROSS-SECTIONAL STUDY

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Background: Subacromial Pain Syndrome (SPS) is a prevalent musculoskeletal shoulder disorder. Shoulder pain in overhead athletes is often associated with sport-specific demands and changes in strength, flexibility, and posture at the shoulder and along the upper limb. Crossfit is a popular sport with a high prevalence of musculoskeletal disorders, including in the shoulder. Therefore, identifying performance and physical impairments in the shoulder of Crossfit practitioners with SPS may contribute to a better understanding of the high prevalence of this disorder.
Objectives: This study aimed to compare the shoulder's physical performance and clinical measures between Crossfit practitioners with and without SPS.
Methods: An observational cross-sectional study was conducted in CrossFit boxes in Rio de Janeiro, Brazil. Twenty participants with SPS and 23 participants without SPS were included. Participants performed upper limb physical performance tests (Closed Kinetic Chain Upper Extremity Stability Test, Seated Medicine Ball Throw Test, Upper Quarter Y-Balance Test). Range of motion and isometric muscle strength were also investigated.

Self-reported pain, disability. Possible differences between groups were investigated using the independent sample t-test (two tailed).
Results: There was no statistically significant difference between groups for upper limb physical performance tests, shoulder range of motion and isometric strength. The result of the SPADI in the SDSA group was 30.7% (23.62) for pain, 16.46% (19.24) for disability, and a total score of 21.92% (20.22).
Conclusion: Crossfit practitioners with and without SPS presented similar upper limb physical performance.
Implications: Subacromial pain syndrome may not influence performance on physical tests, strength level, and upper quadrant range of motion in CrossFit practitioners. Including crossfit-specific movements in the physical assessment can complement the physical evaluation.
Keywords: Shoulder, Pain, Athletes

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Ethics committee approval: Augusto Motta University Centre (UNISUAM); CAAE: 48948621.3.0000.5235.

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EVIDENCE-BASED PRACTICE OF PHYSICAL THERAPISTS WHO WORK IN DEAF SPORTS - PILOT STUDY

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Background: Deaf sport involves the practice of sports performed by deaf athletes, contributing to the development of self-esteem, quality of life and greater social participation of members of the deaf community. Thus, physical therapy performance plays a fundamental role in maintaining and improving the functional capacity of this population. Evidence-Based Practice (EBP) is a process that integrates the best scientific evidence, the physical therapist's clinical experience and the patient's preferences, aiming to offer an adequate and efficient service and treatment, guaranteeing quality of care. Thus, EBP should be used by professionals in clinical

practice with the deaf athlete population. However, no studies are found in the literature that highlight its use by professionals working with this population.
Objectives: Evaluate the knowledge and use of EBP by physical therapists who work in deaf sports
Methods: This is a pilot study, conducted in parallel with a quantitative exploratory cross-sectional study. Brazilian physical therapists participated, female and male, who had been working for at least 3 months in deaf sports and who were associated with state deaf sports federations or the Brazilian Confederation of Deaf Sports (CBDS). A semi-structured questionnaire was used, prepared by the research team, with questions about personal and demographic data, professional training, and the use of EBP. Nominal and/or ordinal variables were described in absolute and relative frequency.
Results: Five physical therapists (30.4±3.36 years) participated, mostly male (60%, n=3). 80% of the participants (n=4) had already heard about EBP, with 60% (n=3) indicating that they use EBP partially in their appointments, and 20% (n=1) said that EBP is a determining factor in choosing the best conduct. As resources used for clinical decision-making, 100% (n=5) use clinical experience, 80% (n=4) use clinical practice guidelines and 60% (n=3) use scientific articles, demonstrating a non-homogeneous use of the pillars that support EBP. Regarding the updating of clinical knowledge, 80% (n=4) took courses and participated in scientific events/conferences, 60% (n=3) use scientific articles, 40% (n=2) reported participating in study groups and only 20% (n=1) reported using books, suggesting that knowledge updating may have often been based on sources with high risks of bias.
Conclusion: Physical therapists who work in deaf sports are aware of EBP, use resources related to it, but still encounter difficulties and limitations for its applicability in clinical practice. Future studies, with more professionals, are necessary for a national overview of the knowledge of EBP by physical therapists who work in deaf sports.
Implications: There are still no studies in the literature evaluating the influence of EBP on the performance of the physical therapist in Brazilian deaf sports, despite knowing that this can promote adequate, efficient, and higher quality physical therapy treatment. From the data found, professional education policies to promote greater knowledge and use of EBP by these professionals are necessary for a more qualified service to the deaf athlete population.
Keywords: Physical Therapy, persons with Hearing Impairments, Sports for Persons with Disabilities

Conflict of interest: The authors declare no conflict of interest.
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COMBINATION OF CLINICAL AND GAIT MEASURES TO CLASSIFY FALLERS AND NON-FALLERS IN PARKINSON'S DISEASE

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Background: The multifactorial nature of falls in Parkinson's disease (PD) is well described. Clinical aspects (e.g., fear of falling and disease severity) and gait deficits (e.g., difficulties with dual task walking and freezing of gait episodes) are among identified risk factors of falling. However, optimal assessment for the identification of fallers remains unclear.
Objectives: To identify clinical and objective gait measures that best discriminate fallers from non-fallers in PD, with suggestions of optimal cutoff scores.
Methods: Cross-sectional study composed by 127 individuals with mild to moderate PD classified as fallers (≥2 falls) or non-fallers based on previous 12 months falls. Clinical measures (demographic, motor, cognitive and patient-reported outcomes) were assessed with standard scales/tests. For measuring gait parameters, participants were asked to walk, at a self-selected pace, back and forth on a straight 9-m walkway for 2 minutes in single and dual-task (i.e., forward digit span) conditions, while instrumented with eight, synchronized inertial sensors at the sternum, lumbar spine, bilaterally on the wrists, shins, and feet. We extracted 24 clinical measurements and 39 objective variables from those instruments. Receiver operating characteristic (ROC) curve analysis identified measures (separately and in combination) that best discriminate fallers from non-fallers; we calculated the area under the curve (AUC) and identified optimal cutoff scores (i.e., point closest-to-(0,1) corner).
Results: Thirty-one participants (24.4%) were classified as fallers and 96 (75.6%) as non-fallers. Fallers had more severe motor symptoms and more advanced disease stage than non-fallers. Single gait and clinical measures that best classified fallers were foot strike angle (AUC=0.728; cutoff=14.07°) and the Falls Efficacy Scale International (FES-I; AUC=0.716, cutoff=25.5), respectively. Combinations of clinical+gait measures had higher AUCs than combinations of clinical-only or gait-only measures. The best performing combination included FES-I score, New Freezing of Gait Questionnaire score, foot strike angle and trunk transverse range of motion (AUC=0.85).
Conclusion: The combinations of clinical and gait measures have higher discriminative ability in classifying fallers from non-fallers among people with PD than combinations of clinical-only and gait-only measures.
Implications: The falls consequences represent great independence and autonomy loss for patients and high costs to health-care services. In this context, it is necessary to devote attention to falls management in PD, including the identification of PD-specific markers for risk of falling. Therefore, the use of wearable inertial sensors is useful and can enhance the traditional fall risk assessment in PD.
Keywords: Parkinson, Gait, Falls

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: London-Bloomsbury NHS Research Ethics Committee (and Health Research Authority; 20/LO/1036, 05/10/2020) and the Institutional Review Board of the Oregon Health & Science University (#9903).

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INCREASING OLDER ADULTS' VITALITY THROUGH A PRIMARY CARE INTERVENTION

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Background: The intrinsic capacity of the older adults is intertwined with the ability to perform activities of daily living independently and autonomously. The World Health Organization suggests that handgrip strength is an important measure of intrinsic ability. The measure of muscle strength decreases with advancing age and this measure is considered a low-cost and reliable predictor of declines in intrinsic capacity, morbidity, and mortality.
Objectives: To evaluate the effects of an intervention protocol based on multimodal physical exercises, at moderate intensity, simultaneously with cognitive stimulation (dual-task), on upper limbs muscle strength in community-dwelling healthy older adults.
Methods: 37 older adults, with no cognitive dysfunction, participated in the study. Participants were grouped into a Dual Task Exercise group (DTEx, n=23) and performed 24 sessions, twice a week, for 75 minutes, and a control group (CG, n=14) who received information on health education and did not perform physical exercises. To evaluate the muscle strength of the upper limbs, the handgrip test was used using a hydraulic dynamometer (Jamar®). Two-way repeated measures ANOVA was used for analysis hand grip strength and Bonferroni tests were used as post-hoc for within-group and between-group comparisons. The project was registered in the Brazilian Registry of Clinical Trials (UTN code: U1111-1233-6349).
Results: There was an interaction Group *x* Time for the handgrip strength, both for muscle strength on the right side ($F(1.35) = 8.013$ $p \leq 0.008$, $\eta 2p = 0.186$) and left side ($F(1, 35) = 9.055$, $p \leq 0.005$, $\eta 2p = 0.206$). After the intervention, the DTEx group showed greater handgrip strength on the right side (Assessment: 20.4 ± 1.4 kgf; Reassessment: 24.5 ± 1.2 kgf, $p \leq 0.001$) and on the left side (Assessment: 18.3 ± 1.3 kgf; Reassessment: 22.2 ± 1.2 kgf; $p \leq 0.003$). Participants of the control group demonstrated stability in muscle strength measures for the right side (Assessment: 24.2 ± 1.8 kgf; Reassessment: 23.0 ± 1.6, $p = 0.437$) and for the left side (Assessment: 24 .2 ± 1.7 kgf; Reassessment: 22.1 ± 1.6, $p = 0.196$). The DTEx group showed clinically relevant increases of approximately 20.9% and 21.3% in right and left upper limb muscle strength, respectively.
Conclusion: The results suggest that multimodal physical exercise in dual task and moderate intensity resulted in significant improvements in upper limb muscle strength on older adults.
Implications: Considering that muscle strength is an indicator of vitality, a key element for the participation of the older adults to healthy aging, effective and low-cost therapeutic strategies, such as the one investigated here, are important tools to be included in primary health care to promote Healthy Aging.
Keywords: Aged, Exercise, Preventive care

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – 001, as scholarship in behalth of the 1st and 2nd authors.
Ethics committee approval: Research Ethics Committee of the Institute of Health Sciences of the Federal University of Pará (CAAE no. 03427318.3.0000.0018).

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RELATIONSHIP BETWEEN PHYSICAL AND PSYCHOLOGICAL CHARACTERISTICS WITH PAIN INTENSITY AND FUNCTION IN RUNNERS WITH PATELLOFEMORAL PAIN

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Background: Patellofemoral pain (PFP) is a complex and multifactorial dysfunction whose etiology is not yet fully understood. It is believed that changes in proximal, local, and distal physical factors around the knee may increase patellofemoral stress and result in pain. The influence of psychological aspects on the individual's perception of pain has been increasingly recognized. Nevertheless, few studies have related physical and psychological characteristics with pain and physical function in runners with PFP.
Objectives: The aim of the study was to verify whether physical and psychological variables of runners with PFP are associated with pain intensity and physical function.
Methods: These are partial results of a cross-sectional study. Isometric hip abductor and extensor, and knee extensor torques were evaluated using a handheld dynamometer. Ankle dorsiflexion amplitude was assessed using the anterior lunge test. The psychological variables assessed were pain catastrophizing and kinesiophobia. Pain catastrophizing was assessed by the Brief Pain Catastrophizing Scale (B-PCS), while kinesiophobia was assessed by the Tampa Scale for Kinesiophobia. Pain intensity in the last week was assessed using the Visual Analog Scale for Pain (VAS) and physical function was assessed using the Knee Anterior Pain Scale. The association between isometric torque, ankle dorsiflexion amplitude, kinesiophobia, and catastrophizing with pain intensity and physical function was investigated using the Spearman test, for analysis, a significance level of alpha < 0.05 was adopted. The degree of association was determined based on Munro's Proposal.
Results: Ten runners with PFP (5 women and 5 men) with a mean age of 29 (±5.3) years were evaluated. A moderate correlation between isometric hip abductor torque and physical function was observed (p: 0.03, r=0.66). No other correlations were observed.
Conclusion: Greater isometric hip abductor torque was associated with better physical function in runners with PFP. Other associations may be observed with an increase in sample size.
Implications: The results of this study reinforce the findings of previous studies that demonstrated that strengthening the hip abductor muscles results in improvement in pain and physical function in runners with PFP.
Keywords: Patellofemoral Pain, Running, Kinesiophobia

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES).
Ethics committee approval: This study was approved by the Human Research Ethics Committee of the Federal University of São Carlos (UFSCar), SP, Brazil (CAAE: 65066022.3.0000.5504).

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THE ESCAPE TRIAL FOR OLDER PEOPLE WITH CHRONIC LOW BACK PAIN: PROTOCOL OF A RANDOMIZED CONTROLLED TRIAL

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Background: Low-back pain is one of the most common health conditions worldwide. It is defined as pain below the costal margin and above the inferior gluteal folds. Current guidelines recommend management of chronic health (e.g., low back pain) conditions in older people at primary health care settings using active strategies (e.g., exercise). In non-specific low back pain, high quality evidence supports active strategies for general population. However, the management of non-specific low back pain in older people has been overlooked and evidence is limited to a small number of low powered randomized controlled trials with high risk of bias.
Objectives: The primary outcomes will be pain intensity over the previous week and disability. The secondary outcomes will be: Global impression of recovery; frequency of falls; fear of falling; and Physical Active level.
Methods: This is a prospectively registered, open, two-arm randomized controlled trial comparing the group-based exercise and waiting list. The randomization sequence to our two groups of interest (i.e., group-based exercise or control) will be computer-generated by one of the investigators who will not be involved in the recruitment of participants. The sequence will be blocked (block sizes of 4, 6, and 8, in random order). Allocation will be concealed in sequentially numbered, sealed, opaque envelopes. Participants will be stratified by gender (female or male). The GBE comprises three sessions per week of group-based exercise in a local community center, for 8 weeks. Each group session will consist of 10 to 18 participants and each exercise session will last 60 minutes and consist of four stages: (1) five minutes warm up (i.e., self-regulated walk); (2) twenty minutes of moderate intensity walking; (3) thirty minutes of resistance training for the major muscles of the leg, trunk and arm and balance exercises that progress in difficulty; and (4) five-minute cool down period (i.e., self-regulated walk). Participants randomly allocated to control group will remain on a waiting list. In addition, weekly contact will be made to ensure that they do not start treatment during the study protocol. However, previous treatments like medications will be allowed. The sample size calculation was performed using the G*Power 3.1 software. A sample size of 120 participants was calculated (60 in each group), with a statistical power of 80%, alpha of 5%, and 20% dropout rate. The statistical analysis will be performed following the intention-to-treat analysis principles. Then, considering normal distribution, an analysis of mixed linear models (random intercepts and fixed coefficients) will be conducted, which incorporated terms for treatment, time, and the treatment-time interactions.
Implications: The practice of individualized exercise has been studied for the management of chronic non-specific low back pain in older people. However, the group exercise, even showing high quality evidence for the improvement of several important outcomes in this population, has been ignored until now. Thus, the results of this study have the potential to indicate a viable and accessible strategy for managing chronic non-specific low back pain in older people.

Keywords: Low back pain, Older people, Disability

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics Committee (number 37088920.5.0000.5108).

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CONTENT ANALYSIS OF INFORMATION AVAILABLE ON INTERNET SOURCES ABOUT PLAY ACTIVITIES

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Background: Child development depends on motor and environmental stimuli that can be experienced during play activities. Parents' virtual access to information on how to stimulate their babies through play has been frequent, but the quality of this information should be investigated.
Objective: To verify the type of information available on internet sources about play activities for children up to 1 year of age.
Methods: Content analysis study, which is part of a collaborative study between the University of Brasília (UnB) and the University of Delaware (UD). The same coding protocol developed by a team of specialists in child development and early intervention at the UD was used. This study is a sub-analysis in which only Brazilian sources related to play activities available on the internet for children under 1 year old were included. A search was carried out through the Google site, using the terms: “play activities for babies”, “how to play with babies”, “play activities” and “babies”. The inclusion criteria of the analyzed sources were a) any sources on websites that contained information about play activities for children younger than 1 year of age; b) sources available on the internet. Information regarding the type of source, details of the authors, child’s development process and the role of parents in development were extracted and individually coded using Excel by two coders (interrater reliability: M=87.98%, SD= 6.2).
Results: One hundred and fifteen sources were identified, and 100 sources were included. Most sources included were popular websites (52%), followed by professional organization websites (24%). Among the sources included, only 9% mentioned the authors' credentials, 5% mentioned information about the child development process, and 5% about the role of parents in the developmental process.
Conclusion: Most of the sources were from popular websites, and in general, those provided a few or no information related to the authors' credentials (e.g., authors' education and expertise). Content and information about how child development occurs and the importance of parents in child development were found on the minority of websites.
Implications: Parental knowledge can directly impact their children's development. Play websites can be a valuable source of information for parents, but it is extremely important that the information provided is accurate, up-to-date and evidence based.

Health and early childhood education professionals can play an important role in directing parents to reliable sources about play for children under one year old.
Keywords: Child development, Play activities, Content analysis

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: We thank the University of Delaware team for providing training on the analysis performed.
Ethics committee approval: As this was a content analysis, no ethics board approval was required for this study.

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PERCEPTION OF HEALTH PROFESSIONALS ABOUT EARLY INTERVENTION SERVICES

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Background: Family-Centered Care is an approach that has been widely used in early intervention (EI) programs. This approach focuses on the child and their family as the central role in all decision-making processes related to health care, with mutual benefits among those involved. However, the implementation of IP services seems to differ across regions and healthcare facilities. Thus, there is a need to characterize the service provided in Brazil from the perspective of health professionals.
Objectives: To verify the perception of health professionals in relation to the service offered in EI.
Methods: The study design is cross-sectional. Health professionals who work in EI programs in Brazil (for at least 3 months) took part in the study. The online questionnaire was developed using Qualtrics software. This questionnaire consisted of multiple-choice questions about socioeconomic and demographic information, professional training, and professionals' perception of family involvement in EI and services. Descriptive analysis was performed.
Results: Twenty-two health professionals (female: n=20; 90.9%) participated in the study, the majority being physical therapists (n=14; 63.6%), and the others speech therapists (n=3; 13.6%), occupational therapists (n=2; 9.1%), psychologists (n=2, 9.1%), and nurse (n=1; 4.5%). Most of them work in a multidisciplinary team (n=19; 86.4%); 12 participants (54.5%) answered that they have less than 10 years of experience and nine (40.9%) that they have more than 10 years of experience in EI. Most answered that they talk about the therapeutic goals with the family (n=21; 95.5%) and that they consider the needs of the family when establishing intervention goals ("always": n=16; 72.7%; and "most of the time": n=5; 22.7%). Regarding the involvement of family members, part of the professionals answered that most family members wait in the waiting room until the end of the session (n=8; 36.4%) during EI care; others answered that the families stay by their side observing the session (n=8; 36.4%), or effectively participate in the session (n=6; 27.3%). More than half of the professionals answered that only half of the families (n=12; 54.5%) are interested in receiving and following orientations in the home environment. Furthermore, professionals reported that they have favorable conditions to provide adequate care to children and their families (n=18; 81.8%) and that they are satisfied with their work environment (n=20; 90.9%).
Conclusion: From the perspective of professionals, most of them have considered the needs of families in the EI. However, they reported that not all families seem to be involved in this process.
Implications: Health professionals seem to consider the family-centered care approach during their EI care. However, they should explore new strategies to involve families more effectively.
Keywords: Family, Health professional, Early intervention

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: We thank the health professionals for collaborating by dedicating their time to answer the questionnaire.
Ethics committee approval: Ethics Committee of the Faculty of Ceilândia (CEP/FCE) of the University of Brasília (UnB), with the Certificate of Presentation of Ethical Appreciation (CAAE - 63169122.0.0000.8093).

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EVALUATION OF THE PELVIC FLOOR BY NIR SPECTROSCOPY: SYSTEMATIC REVIEW

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Background: The interest in the use of Near Infrared Spectroscopy (NIRS) in functional urology and in the treatment of lower urinary tract dysfunction has mentioned its potential to detect the oxygenation status and hemodynamics of various organs. To assess the function of the pelvic floor muscles (PFM), fundamental for the treatment of urogynecological disorders, measurements related to the kinetics of oxygen recovery during muscle training are still lacking.
Objectives: To analyze the effectiveness of NIRS for assessing MAP.
Methods: Systematic review (PRISMA) carried out in PubMed, Virtual Health Library, Scielo, Cochrane Library, Web of Science, Scopus, PEDro, Clinical Trials and Brazilian Registry of Clinical Trials, systematically searched for studies from 2013 to 2023, combining DeCS/MeSH terms: "Near Infrared Spectroscopy and Pelvic Floor" or "Spectroscopy NIR and Pelvic Floor". Eligibility criteria were adopted: MAP evaluation with NIRS, randomized or non-randomized controlled clinical trials, outcomes and articles in English, Portuguese, or Spanish. And exclusion criteria: overlap, case report or review, incomplete data, and use of NIRS in other muscles. The PEDro rating scale was applied.
Results: Of nine articles, four overlapping articles were excluded, one for not applying NIRS under MAP, one for incomplete data and two reviews. Only one was included and applied to the PEDro scale (score 6). Authored by Macnab et al. (2019), aimed to develop a NIRS interface for measuring kinetic oxygen parameters (PCO) in PFM. This was a single-arm clinical study (Columbia) in a sample of 4 healthy volunteers (mean age 40 years). A transparent speculum containing the NIRS interface, and a standardized sequence of exercises was used. Data from sustained maximum voluntary contraction with analysis of the difference between Oxyhemoglobin and Deoxyhemoglobin (HbDiff) were observed. As a result, they identified a decline in HbDiff from the beginning of the contraction with restoration in recovery. Differences between right and left sides were also observed. The feasibility of monitoring PCO on the right and left sides of the PFM was evidenced. Qualitative verifications confirmed

reliable data capture with minimal noise and their chromophore alteration patterns corresponded to those already observed in other voluntary muscles. There are limitations (sample size, use of speculum and unfeasibility of further statistical analyses), however, good quality data were presented with individualized and careful assessment of the muscles submitted to training regardless of the dysfunction.
Conclusion: NIRS has the potential for acquiring information not previously accessible, but it is not yet ready for clinical practice, requiring further studies to explore its potential in providing PCO, currently not available through other means.
Implications: In PFM training, we lack standardized methodologies to quantify strength and resistance measurements, which is a challenge for clinical treatment planning. Obtaining PCO, through NIRS technology, can improve the understanding of PFM dysfunctions and respond to the call for techniques that improve care.
Keywords: NIR spectroscopy, Pelvic Floor Disorders, Functional Performance

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Not applicable.

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ASSOCIATION BETWEEN "TEXT NECK" AND NECK PAIN IN ADULTS: A LONGITUDINAL STUDY

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Background: "Text neck" is defined by the cervical flexion adopted when using mobile devices. The possible causal relationship between this posture and neck pain is still widely discussed.
Objectives: The aim of this study was to investigate this association.
Methods: It is a longitudinal observational study. The sample consisted of 396 volunteers without neck pain aged between 18 and 65 years. Sociodemographic, anthropometric, lifestyle (level of physical activity, smoking, sleep quality), psychosocial (anxiety, depression, social isolation) and smartphone use issues were assessed using a self-reported questionnaire. Text neck was assessed by measuring the cervical flexion angle of participants standing while typing text on their smartphones, using the cervical range of motion (CROM) device at baseline. Two questions were used to assess the point prevalence and frequency of neck pain one year after baseline: "Did you have neck pain today?" With the following answer options "yes" or "no" and "How often do you have neck pain?", the answer options were "very often", "often", "from time to time", "rarely" and "never".
Results: Of the total, 84% (n=335) of participants completed the one-year follow-up. Neck pain was reported by 10% (n=40) of the sample. The average cervical flexion angle of the standing participants using the smartphone was 34° (SD=12). Multiple logistic regression analysis showed that participants' neck flexion angle while standing using a smartphone was not associated with neck pain (OR = 1.01; 95% CI: 0.98-1.04; p=0.64) or frequency of neck pain (OR = 1.01; 95% CI: 0.99-1.03; p=0.44) one year after baseline. Of the potential confounders, sleep quality was associated with neck pain (OR = 1.76; 95% CI: 1.18−2.62; p=0.006) and frequency of neck pain (OR = 1.53, CI 95 %: 1.19−1.96; p=0.001). When compared to active participants, insufficiently active participants increased the chances of neck pain (OR = 2.42; 95%CI: 1.04−5.63; p=0.04).
Conclusion: "Text neck" was not associated with neck pain or frequency of neck pain in adults.
Implications: These results challenge the belief that poor neck posture while using smartphones leads to neck pain and may help mitigate the impact of negative information on the cervical spine.
Keywords: Neck pain, Posture, Text neck

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Acknowledgment: Not applicable.
Ethics committee approval: CEP UNISUAM (3.030.275).

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ANALYSIS OF ANXIETY INVENTORY SCALE FOR RESPIRATORY DISEASES (RAI) FOR INDIVIDUALS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Background: Anxiety is a frequent comorbidity in patients with Chronic Obstructive Pulmonary Disease (COPD) and with important repercussions, such as functional impairment, decreased quality of life and adherence to treatment, and increased risk of hospitalization. In this context, the Anxiety Inventory for Respiratory Diseases (AIR), the only instrument specifically developed to investigate anxiety symptoms in this population, was cross-culturally adapted for use in Brazil. Still, the measurement properties of the face-to-face version have not yet been investigated.
Objectives: To investigate the internal consistency, test-retest and inter-rater reliability, convergent and divergent validity of the face-to-face AIR in patients with COPD.
Methods: This is a cross-sectional methodological study. On the first day, after signing the Free and Informed Consent Form, the Mini-Mental State Examination, the sociodemographic and clinical questionnaire were applied, and anthropometric data were collected, followed by spirometry. Subsequently, patients answered the Modified Medical Research Council (mMRC), the COPD Assessment Test (CAT), the AIR, the Hospital Anxiety and Depression Scale (HADS), the Beck Anxiety Inventory (BAI), and the London Chest Activity of Daily Living (LCADL). To determine the test-retest and inter-rater reliability of the IAR, seven days after the first application of the questionnaire, the leading researcher reapplied the scale with a control form via telephone contact, and a second rater contacted patients 48 hours later. The internal consistency of the AIR was measured using Cronbach's alpha and reliability using the Intraclass Correlation Coefficient (ICC). Spearman's correlation test (rho) was used to determine validity ($p<0.05$).
Results: Twelve individuals [7 female, age 60.5 (min. 53.7-max.70.8) years] participated in the study; nine were included in the test-retest reliability analyses and eight in the inter-rater reliability. For internal consistency, Cronbach's α was 0.94. For test-retest reliability, the ICC was 0.73; for inter-rater reliability, it was 0.88. Regarding convergent validity, significant correlations of high magnitude were observed between the AIR and the HADS anxiety domain (rho = 0.82), depression domain (rho = 0.87), and the total score (rho = 0.79), and of moderate magnitude between the AIR and the BAI (rho = 0.70). For divergent validity, non-significant

correlations of weak magnitude were observed between AIR and LCADL (rho = 0.39), AIR and CAT (rho = 0.10), and AIR and MRC (rho = 0. 17).
Conclusion: The study's preliminary results indicate that the AIR demonstrates adequate measurement properties for assessing anxiety symptoms in patients with COPD. The study will be continued to expand the sample number.
Implications: This study will provide a measurement instrument for investigating anxiety symptoms in patients with COPD with appropriate measurement properties, which may facilitate early identification and proper treatment.
Keywords: Chronic Obstructive Pulmonary Disease, Anxiety, Reproducibility of Tests

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Polyclinic of the Regional Hospital of Araranguá, National Council for Scientific and Technological Development-Process 430966/2018-0 and Coordination for the Improvement of Higher Education Personnel-Financing 001.
Ethics committee approval: Federal University of Santa Catarina through number CAAE 21334419.6.0000.0121.

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ANALYSIS OF THE RELATIONSHIP BETWEEN FUNCTIONAL TESTS PERFORMANCE AND LOWER LIMB STRENGTH

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Background: Lower limb stabilizing muscle strength imbalance and changes in functional performance and dynamic balance have been reported as predictors of lower extremity injuries. Lower limb functional tests are commonly applied in clinical practice to assess functional performance as well as used as a measure of progression during rehabilitation. Among them, the Star Excursion Balance Test (SEBT) and the Single Leg Hop Test (SLHT) stand out as easy-to-apply and low-cost tools.
Objectives: To evaluate the relationship between lower limb stabilizing muscle strength and performance in functional tests in individuals without history of injury.
Methods: This is a quantitative cross-sectional study. As eligibility criteria, male individuals, aged 18 to 30 years, with no history of previous injury to the lower limbs were included. The data collection was divided into two days. On the first day, anamnesis was performed, anthropometric data were collected, familiarization with the muscle strength test was carried out and the functional tests SLHT and SEBT were applied to the Dominant Limb (DL) and Non-Dominant Limb (NDL). On the second day, the strength of the stabilizing muscles of the hip (lateral rotators and abductors), knee (quadriceps and hamstrings) and ankle (inverters and evertors) were assessed using a portable Lafayette® dynamometer stabilized by an inelastic band. Three maximal voluntary isometric contractions were performed, lasting five seconds, with a thirty-second interval between each contraction, bilaterally. The peak strength of each movement was recorded and later normalized by body mass. Statistical analysis was performed using the SPSS 18.0® software, applying the Shapiro-Wilk normality test and the Pearson correlation test. A significance level of $\alpha<0.05$ was adopted.
Results: 20 male individuals were collected. A moderate positive correlation was observed between peak strength of the NDL lateral rotators and hip abductors with performance in the DL SLHT and posteromedial SEBT. In addition, the strength of the knee extensors of both limbs was positively correlated with performance in the SLHT of the NDL. Furthermore, a correlation was observed between peak strength of NDL lateral rotators, DL ankle inverters and hip abductors with NDL posteromedial SEBT.
Conclusion: The maximum isometric strength of the lower limbs stabilizing muscles is related to the performance in functional tests.
Implications: The weakness of the stabilizing muscles of the hip and knee is directly related to a lower performance in functional tests, which may cause instability during movements, resulting in biomechanical changes that increase the risk of injury to the lower limbs. Still, the findings of this study elucidate that the performance analysis should take into account the bilateral force for the parameters of rehabilitation and injury prevention.
Keywords: Muscle Strength, Physical Functional Performance, Muscle Strength Dynamometer

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Study approved by the Research Ethics Committee of the Faculty of Philosophy and Sciences - São Paulo State University, under protocol n° 5.502.514.

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EFFECTS OF TRAINING WITH BLOOD FLOW RESTRICTION ASSOCIATED TO ELECTROSTIMULATION ON MUSCLE THICKNESS AND PERFORMANCE: CLINICAL TRIAL PROTOCOL

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Background: Among the factors that can influence an athlete's performance, muscle strength stands out in relation to performance and risk of injuries in sports. As an alternative to quadriceps strength training, blood flow restriction (BFR) and neuromuscular electrical stimulation (NMES) are two techniques used to enhance muscle recruitment with less risk of mechanical damage and joint overload.
Objectives: Evaluate the effects of strength training with BFR and BFR associated with NMES of the quadriceps muscle in physically active subjects on parameters of muscle thickness and lower limb performance.
Methods: This is a randomized clinical trial. The volunteers will sign the informed consent form. Will be recruited 60 individuals of both sexes, aged between 18 and 35 years, physically active according to the International Physical Activity Questionnaire (IPAQ). An initial anamnesis will be carried out to characterize the sample and anthropometric data will be collected, as well as thigh cytometry. Then, the volunteers will be randomized into three groups: Blood Flow Restriction Group (BFRG), Blood Flow Restriction Associated with Electrostimulation Group (BFREG) and Conventional Exercise Group (CEG). The evaluators will be blind in relation to the group that the individual was allocated, as well as the person responsible for the statistical analysis. Ultrasonography will be used in vascular

Doppler mode to measure Total Occlusion Pressure (TOP) and in two-dimensional mode with a linear transducer to assess quadriceps muscle thickness. The performance of the lower limb will be evaluated from the height of the jump on the contact platform in the Counter Movement Jump (CMJ), Squat Jump (SJ) and Drop Jump (DJ) modes from an elevation of 30 and 60cm. The test of a maximum repetition (1MR) unilateral in the extension chair will be used to quantify the load during the interventions. The flow restriction protocols and the same combined with electrostimulation will have four sets of 30, 15, 15, 15 repetitions, with 1 minute of rest between sets of knee extension, with a load of 30% 1MR and 50% of the TOP, which will be adjusted by 5% each week of the protocol until reaching a TOP of 80%. In the CEG, conventional strengthening will be performed, with 70% 1MR in the leg extension, which will have three sets of 10 repetitions, with a 1-minute rest interval between sets. The training will be carried out twice a week, for a period of eight weeks, with reassessment of the 1RM test in the fourth week. At the end of the protocol, individuals will be reassessed.
Conclusion: It is expected that the findings of this study confirm the effectiveness of training with blood flow restriction compared to conventional exercise and that there is superiority in results when associated with neuromuscular electrostimulation.
Implications: In clinical practice, if proven effective, this strengthening program can be proposed as a muscle strengthening option for individuals who cannot tolerate high loads during conventional training.
Keywords: Muscle Strength, Blood Flow Restriction Therapy, Electric Stimulation Therapy

Conflicts of interest: The authors declare no conflict of interest.
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Ethics committee approval: Universidade Estadual Paulista – UNESP Faculdade de Filosofia e Ciências - Campus de Marília n° 5.809.107.

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INTERSEGMENTAL COORDINATION BETWEEN HUMERUS AND SCAPULA DURING ARM ELEVATION IN YOUNG ADULTS

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Background: The intersegmental coordination between humerus and scapula and its variability are inherent to the functional movements of the shoulder. The literature is vast in the characterization of this relationship in discrete angles such as 30, 60, 90 and 120 degrees. Despite the great importance of these specific points of arm elevation amplitude, it is possible to describe coordination by another approach that provides information on the entire time series of arm elevation to the maximum amplitude, as well as on the intra and inter subject variability of the arm elevation coordination pattern. Therefore, exploring the pattern of coordination between humerus and scapula might be relevant to better understand motor variability of the individual and throughout the arc of arm movement.
Objectives: Explore the coordination pattern between humerus and scapula and its variability in asymptomatic individuals during arm elevation movement.
Methods: This is an observational cross-sectional study, in which the coordination between humerus and scapula was evaluated in fifteen individuals without shoulder pain during the maximum arm elevation movement in the self-selected plane. The evaluation was performed by 3D analysis of the scapular kinematics in a laboratory environment, using the hardware (Ascension Technology Corporation, Burlington, VT) TrakSTAR (miniBird®) integrated with the software MotionMonitor™ (Innovative Sports Training, Inc. Chicago, IL).
Results: The angle diagrams with the relationship between the humerus and the scapula during the entire time series with 3 trials for each subject of the arm raise in a self-selected plane show different patterns of coordination. Some subjects have a linear and continuous relationship between the two segments throughout the movement, while others have a greater contribution from a specific segment at different amplitudes. This difference was identified mainly in the last degrees of movement. A variability between the three attempts was also observed in some subjects, while others showed great consistency between the trials. Finally, different patterns of coordination were observed between the up and down movements of the arm among the subjects.
Conclusion: The observation of coordination between humerus and scapula throughout the time series suggests that there are different patterns of coordination between attempts, between individuals and between the phases of the arm raising movement.
Implications: The intersegmental coordination between humerus and scapula during arm elevation shows important information for the characterization of the individual's motor behavior that go beyond discrete points of arm elevation movement. The variability observed in the motor pattern may be related to the inherent variability of shoulder movement and the individual's ability to adapt their motor strategies to functional demands, which possibly has repercussions on cases of shoulder dysfunction, its management and prognosis.
Keywords: Shoulder Joint, Kinematics, Biomechanical Phenomena

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INTRA- AND INTER-RATER RELIABILITY AND AGREEMENT OF STIMULUS ELECTRODIAGNOSTIC TESTS IN POST-COVID-19 PATIENTS WHO EXPERIENCED MODERATE OR SEVERE INFECTION

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Background: Post-COVID-19 patients may have several sequelae, such as neuromuscular electrophysiological disorders (NED), which can be evaluated using the stimulus electrodiagnosis test (SET). However, no information is available about the reliability and agreement of SET-in diagnosing NED in COVID-19 patients.

Objectives: Our aim was to verify the intra- and inter-rater reliability and agreement of SET measurements in the rectus femoris (RF), vastus medialis (VM), vastus lateralis (VL), tibialis anterior (TA), and gastrocnemius lateralis (GL) of post-COVID-19 participants who experienced moderate or severe infection.
Methods: This is an observational prospective study that evaluated 20 post-COVID-19 patients (10 males and 10 females), age: 44.95± 11.07 years, weight: 87.99±19.08kg, height: 1.69±0.09m. Two independent raters took two evaluations using the SET on RF, VM, VL, TA and GL of the right lower limb in each participant. The intra-class correlation coefficient (ICC) and 95% limits of agreement defined the quality and magnitude of the measures.
Results: For intra-rater reliability, all measurements presented correlations classified as high or very high (ICC: 0.71-1.0). For the inter-rater reliability, rheobase, chronaxie, accommodation, and accommodation index presented high or very high correlations, except for the accommodation index of the GL (ICC=0.65), which was moderate.
Conclusion: The reliability of the SET obtained by independent raters was very high, except for the GL accommodation, which presented moderate ICC. Therefore, SET is a reliable tool for evaluating neuromuscular electrophysiological disorders in post-COVID-19 patients.
Implications: The SET test can be a reliable tool to assess NED in post-COVID-19 patients. Our results may improve understanding of peripheral NED assessment and thus guide treatment programs for post-COVID-19 patients.
Keywords: Chronaxie, Electrodiagnosis, Reliability

Conflict of interest: The authors declare no conflict of interest.
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BIBLIOMETRIC ANALYSIS ON SCIENTIFIC PRODUCTION RELATED TO ADHERENCE OF PATIENTS WITH FOOT ULCER DIABETIC TO OFFLOADING RESOURCES

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Background: Diabetic foot is one of the main complications of diabetes mellitus, defined as the presence of ulcers, infection, or destruction of deep tissues of the feet and even by the loss of sensation affecting feet and legs. Diabetic foot ulcers (DFU) have a significant impact on quality of life, the capacity for walking. Reducing excessive mechanical stress is considered the cornerstone of treatment for neuropathic DFU. called offloading intervention which includes devices and footwears, to redistribute weight on the plantar face. Despite strong evidence support the efficacy of offloading devices, the effectiveness of the intervention depends on adherence from the patient to the treatment, an apparently underexplored subject in the scientific literature. Bibliometric analysis can be used to evaluate publications quantitatively and to predict future research directions.
Objectives: To identify and analyze current status of scientific production related to diabetic foot ulcer patient's adherence to offloading resources.
Methods: A bibliometric analysis of the publications was performed on publications from the main collection of the Web Of Science (WoS) database. The search was carried out in the "topics" field of advanced search, using the terms: cast, offloading, off-loading, off-loading device, offloading intervention, non-surgical offloading, ulcer*, diabetic foot, adherence, and patient compliance. We exclude those publications in which adherence was not the dependent variable. The software VOSviewer Copyright © was used to analyze the journals, authors, institutions, countries, and keywords using standard bibliometric indicators. Data were organized in table, graph, and graph format.
Results: The search strategy used resulted in 64 documents that were reduced to 37 after manual analysis. 29 studies were published between the years 2014 and 2022, with the largest number of publications occurring in 2016 (n=6). More cited was "Activity patterns of patients with diabetic foot ulceration — Patients with active ulceration may not adhere to a standard pressure off-loading regimen" authored by David Armstrong, Lawrence Larvey, Heather Kimbriel and Andrew Boulton. The journal Diabetes Care had the highest number of publications. 134 authors have published on the subject of this review. The highest-ranked institution by number of publications was The University of Amsterdam. England, USA and Netherlands were the 3 top ranked countries by citation.
Conclusion: The findings of this study provided information about the trajectory of scientific publications on the subject over the years. The small number of publications on this subject indicates a gap in the scientific literature, providing insight into trends for future studies, considering that adherence directly impacts on the effectiveness of the intervention. In addition, publications found were in English and come from the northern hemisphere, so data from other regions is needed.
Implications: We believe that this study can be useful to professionals who are looking to understand the current status of publications on DFU patient's adherence to offloading devices and to point out its relevance as an emerging research subject.
Keywords: Diabetic foot, Revision, Offloading

Conflict of interest: The authors declare no conflict of interest.
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BIBLIOMETRIC REVIEW ON THE SCIENTIFIC PRODUCTION RELATED TO THE ADHERENCE OF PATIENTS WITH DIABETIC FOOT ULCERS TO HEALTH CARE RESOURCES OFFLOADING

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Background: Diabetic foot (PD) is one of the main complications of diabetes mellitus, being characterized by the presence of ulcers, infection or destruction of deep tissues of the feet and even by the loss of sensitivity of that member in its carriers. Ulcerations can lead to a worse quality of life, because as an ulcer develops, mobility is compromised, requiring the reduction of mechanical loads on the site to favor healing of the lesion. A form of intervention called offloading has been used to redistribute weight on the soles of the feet. It is necessary to consider the factors that involve the patient's adherence to such treatment. However, the topic seems to be little

addressed in the literature. From a bibliometric review, it is possible to delimit an overview of publications and point out directions for research.
Objectives: To carry out a bibliometric review of the scientific production related to the adherence of patients with diabetic foot ulcers to offloading resources.
Methods: This is a cross-sectional and quantitative study. For the search and extraction of data, the Web Of Science (WoS) database was used. The search was carried out in the advanced search tab, using the "topics" field, with the terms: cast, offloading, off-loading, offloading device, offloading intervention, non-surgical offloading, ulcer*, diabetic foot, adherence, and patient compliance. Articles in which adherence was only mentioned or not mentioned were excluded. For the analysis of the results, the software VOSviewer Copyright © was used. The data were organized in table, graph and graph format.
Results: The search strategy used resulted in 64 documents that were reduced to 37 after manual analysis. A total of 29 publications were made between 2014 and 2022, with the largest number occurring in 2016 (n=6). The most cited publication was "Activity patterns of patients with diabetic foot ulceration - Patients with active ulceration may not adhere to a standard pressure off-loading regimen" by David Armstrong, Lawrence Larvey, Heather Kimbriel and Andrew Boulton. The journal Diabetes Care had the highest number of publications. 134 authors published on the subject of this review. The University of Amsterdam institution was featured in publications. England, USA and Netherlands were the most cited countries.
Conclusion: The findings of this study provided information on the development of research on the subject over the years. The small number of publications on this topic indicates a gap in the scientific literature, pointing to the need for further studies, mainly to define how adherence to treatment will be measured. In addition, the publications found were in English and concentrated in the northern hemisphere, requiring data from other regions.
Implications: We believe that this study can be useful to professionals who are seeking to know the panorama of publications on adherence of patients with PD to offloading devices and understand its relevance as an emerging research topic.
Keywords: Diabetic foot, Revision, Offloading

Conflict of interest: The authors declare no conflicts of interest.
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MONITORING THE SENSORY-MOTOR DEVELOPMENT OF RISK INFANTS

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Background: An infant at risk is one who may have impaired sensorineural-motor development due to risk conditions such as prematurity, low birth weight, neonatal distress, risk exposure during pregnancy.
Objectives: Evaluate, detect, and intervene early in the sensorimotor development of infants at risk.
Methods: Follow-up was carried out twice a week, in the Early Intervention Project for Infants (IPL), running since 2008 at the Federal University of Triângulo Mineiro, with 409 infants. For the present study, 307 infants were selected. As inclusion criteria were considered: diagnosis of risk at birth, assessment of motor development before starting physical therapy, and at least two reassessments up to 6 months of chronological age. The instrument used to evaluate the infants was "Assessment of the Neurosensory-motor Development of the Baby at Risk", which allows the assessment of muscle tone (MT); supine (PS), prone (PP), traction for sitting (TS), sitting with support (S) postures; primitive reflexes (PR); postural reactions (RPos); and, primary sensorimotor coordination (CSMP), from 20 to 180 days of postnatal life. In this assessment, a score different from zero indicates a risk for developmental delay, justifying the need for monitoring and early intervention. For intervention, infants were stimulated with colorful, sound toys of different sizes and textures. Caregivers received guidance during the service, and information leaflets with guidance on typical and atypical motor development, home stimulation, in addition to guidance through the project's social media on Instagram, Facebook, and WhatsApp groups of parents and caregivers. The project had the participation of residents and undergraduates in Physical Therapy.
Results: All 307 participants had a clinical diagnosis of risk at birth, mainly due to prematurity and low weight. The initial physiotherapeutic evaluation indicated alterations in 100% of the infants: 51.15% in muscle tone, 52.44% in the supine posture, 59.93% in the prone position, 57% in the tractioned posture for sitting, 56.02% when sitting with support, 43.97% in primitive reflexes, 59.28% in postural reactions, and, 42.02% in primary sensorimotor coordination. The age at which changes were most observed was between the 2nd and 4th month of chronological age, enabling the diagnosis and consequently early intervention. It is worth noting that during the health emergency period due to Covid-19, the monitoring of infants was carried out remotely through telemonitoring.
Conclusion: The results demonstrate evidence regarding pre, peri and post birth risks, the importance of detection and early intervention. Added to this is the important involvement of parents/caregivers following the guidelines for stimulation at home, in addition to the actions of residents and undergraduates who seek to improve the theoretical and practical knowledge of child health care.
Implications: The positive results arising from early intervention indicate the importance of having more health services with better trained and humanized professionals who serve this population, which can also contribute to the implementation of public policies to care for infants at risk and their families.
Keywords: Physiotherapy, Early Intervention, Infant

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Approved by the Research Ethics Committee (CEP) of the Federal University of Triângulo Mineiro —UFTM, opinion n° 2115516.

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RELATIONSHIP BETWEEN MUSCLE STRENGTH AND POSTURAL STABILITY IN OLDER ADULTS DURING GAIT: PRELIMINARY RESULTS

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Background: During functional tasks such as walking, there is a disturbance of postural stability, which can result in falls, which bring functional impairment to the older adults. It is attributed that muscle strength can contribute to postural stability in gait, but it is unclear which muscle groups contribute most to postural stability in gait when it is assessed using the Functional Gait Assessment (FGA).
Objectives: The purpose of the study was to investigate whether handgrip, trunk extensor, hip extensor and abductor, knee extensor, and plantar flexor muscle strengths are related to postural stability in gait in community-dwelling older adults people assessed using the FGA.
Methods: A cross-sectional observational study with community-dwelling older adults (60 years or older) of both sexes, with independent gait and recruited by convenience. Muscle strength (maximum isometric contraction) of handgrip (Jamar dynamometer), trunk extensors, hip extensors and abductors, knee extensors and plantar flexors, normalized by body weight (microFET2 hand dynamometer) on the dominant side was evaluated. Postural stability during gait was assessed by the Functional Gait Assessment (FGA) scale. Pearson (r) and Spearman (rho) analyses were used to verify the correlation between variables considering data distribution. The significance level was set at 5%.
Results: Sixty-six older adults subjects were evaluated with a mean age of 73.70 (±7.8) years. The descriptive characteristics of the sample were mean ± standard deviation: FGA (21.71 ± 5.37) score, grip strength (21.56 ± 8.43 kilogram-force), muscle strength of trunk extensors (2.32 ± 0.93 Newton/weight), hip extensors (1.10 ± 0.56 Newton/weight), hip abductors (2.27 ± 0.87 Newton/weight), knee extensors (2.56 ± 1.18 Newton/weight) and plantar flexors (3.22 ± 1.52 Newton/weight). All muscle strength variables showed moderate and positive correlation with postural stability in gait, being palmar grip strength (p= 0.001, r=0.43), trunk extensor muscle strength (p= 0. 001, r=0.50), hip extensors (p=0.001, rho= 0.56), hip abductors (p=0.001, r=0.51), knee extensors (p= 0.001, rho=0.56) and plantar flexors (p=0.001, rho=0.44).
Conclusion: According to the results, the higher the muscle strength parameters, the greater the postural stability during gait. Thus, muscular strength should be evaluated in this population as a modifiable factor, and the continuity of the study with an increased sample is necessary to confirm the results.
Implications: From the results, we highlight the importance of the relationship between muscle strength and postural stability in the gait of community-dwelling older adults when it is assessed by a reliable and valid instrument. Future studies need to investigate whether changes in muscle strength can generate improvements in postural stability when it is assessed by FGA.
Keywords: Muscle strength, Postural stability, Older adults

Conflict of interest: The authors declare no conflict of interest.

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ASSOCIATION BETWEEN LOWER LIMB STRENGTH AND TRUNK STABILITY IN UPPER LIMB FUNCTIONAL CAPACITY

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Background: The pursuit of better athletic performance has become frequent in sports practice. Therefore, it is fundamental to use functional tests in the evaluation process to assess functional capacity and implement more assertive interventions. The Closed Kinetic Chain Upper Extremity Stability Test (CKCUEST) is a test that evaluates upper limb performance and is consolidated as a reliable measure for clinical application. It is known that various factors such as muscle activation, flexibility, trunk stability, and lower limb strength can influence shoulder complex movement efficiency. However, the relationships between functional tests in identifying or measuring factors related to upper limb performance have not been clarified in the literature.
Objectives: To identify whether trunk and lower limb strength factors predict upper limb functional capacity.
Methods: The database of the Physiotherapy Assessment Tool (PHAST) application was used for the development of this study. Thirty-six healthy participants of both sexes, aged between 25 and 62 years, were included, containing evaluation records with information on performance in CKCUEST, Scapulohumeral Rhythm, Shoulder Strength External, Lateral Rotation Range of Motion, Prone Bridge Test, Pelvic Elevation, Latissimus Dorsi Flexibility and Pectoralis Minor Muscle Tightness, and Torque Knee Isokinetic. Multiple linear regression analysis was performed to identify whether trunk stability and lower limb strength could explain upper limb performance and functional capacity.
Results: The results revealed a statistically significant model for, Scapulohumeral Rhythm, Shoulder Strength External, Lateral Rotation Range of Motion, Prone Bridge Test, Pelvic Elevation, Latissimus Dorsi Flexibility and Pectoralis Minor Muscle Tightness, and Pelvic Elevation predicting 46% of CKCUEST performance (F=7.28, R=0.684, R2=0.468, P=0.008). Additionally, the inclusion of Hamstring Torque in the model (F=8.27, R=0.735, R2=0.541, P=0.003) predicted 54% of CKCUEST performance. No other associations were observed.
Conclusion: Scapulohumeral Rhythm, Shoulder Strength External, Lateral Rotation Range of Motion, Prone Bridge Test, Pelvic Elevation, Latissimus Dorsi Flexibility and Pectoralis Minor Muscle Tightness, and Pelvic Elevation with Hamstring Torque Strength, partially predicted performance in CKCUEST.
Implications: The findings of this study suggest that clinicians should use lower limb strength and trunk and pelvis stability tests as a complement to shoulder evaluation. Additionally, future studies should investigate the influence of other factors associated with these functional tests.
Keywords: Injury Prevention, Upper Limb, Kinetic Chains

Conflict of interest: The authors declare no conflict of interest.

Acknowledgment: Thanks to the PHAST company for providing access to the database.

Ethics committee approval: Approval of Ethics Committee: Federal University of Vale do Jequitinhonha and Mucuri - UFVJM (CAAE: 42214920.4.0000.5108).

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STUDY PROFILE, KNOWLEDGE AND BELIEFS ON PAIN OF BRAZILIAN PHYSIOTHERAPY STUDENTS

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Background: Clinical practice guides for chronic pain management recommend assessment and treatment centered on a biopsychosocial perspective, which requires adequate training of health professionals. Despite the recognition of the importance of pain study and the international recommendations of pain curricula, training in physiotherapy seems insufficient to prepare professionals for the management of people with chronic pain.
Objectives: To understand the study profile of pain in physical therapy graduation in Brazil and to assess whether there is a difference in pain knowledge and beliefs between graduation years and regions of Brazil.
Methods: Cross-sectional study with a descriptive and quantitative approach in which the sample corresponded to physical therapy undergraduate students from all over Brazil. Data were collected through an online form that addressed questions related to the study of pain during graduation, the pain knowledge of undergraduates (Questionnaire of Neurophysiology of Pain, QND, 0-12) and attitudes and beliefs about pain (Health Care Providers' Pain and Impairment Relationship Scale, HC-PAIRS, 0-90). Data were expressed as percentages and mean ± standard deviation and compared across years and regions using one-way ANOVA.
Results: 218 physiotherapy students participated in the study. Only 18.3% of the sample had contact with a specific discipline on pain during graduation, which seems to happen predominantly in the 3rd (28.9%) and 4th (22.6%) years of the course, as well as in the northeast region of Brazil (27.3%). Most students learn about pain diffusely in other disciplines, which happens from the 2nd year onwards (63 to 78%) and predominantly in the southern region (74.5%). The vast majority of students report interest in knowing or deepening the study of pain (95.41%). Students in the 1st year have lower pain knowledge (5.5 ± 2.2) than those in the 2nd (6.8 ± 2.3), 3rd (7.6 ± 2.0), 4th (7. 7 ± 2.0) and 5th (7.3 ± 1.9) years, which corroborates to the level of contact with pain content in the 1st year of the course. Students in the 1st (50.3 ± 9.0) and 2nd (47.1 ± 9.9) years have more dysfunctional beliefs about pain than those in the 4th (43.7 ± 9.7) and 5th (40.8 ± 10.3) years. Regarding the regions of Brazil, the QND and HC-PAIRS scores did not show significant differences.
Conclusion: The study of pain has predominantly been addressed in a diffuse and non-specific way in physiotherapy undergraduate programs in Brazil. Students' pain knowledge is low, especially in the first two years of the undergraduate programs. Students report a high interest in knowing or deepening their knowledge of pain, which reinforces the need to implement the IASP recommendations on the minimum curriculum on pain in physical therapy graduation in Brazil.
Implications: The implementation of a pain curriculum based on the IASP guidelines can help to improve the knowledge of pain among undergraduate physical therapy students in Brazil.
Keywords: Pain, Physiotherapy students, Knowledge

Conflict of interest: The authors declare no conflict of interest.
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CALCULATOR FOR MEASURING PARTICIPATION AND THE ENVIRONMENT — VERSIONS FOR YOUNG CHILDREN AND CHILDREN AND YOUTH: REPORT ON DEVELOPMENT

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Background: The participation of children and young people in home, school and community activities is an indicator of well-being and health. However, children and young people with disabilities have fewer opportunities to participate in these activities compared to subjects without disabilities. The environment can influence participation, making it essential to identify barriers and facilitators. Faced with this need, the PEM-CY (Participation and Environment Measure for Children and Youth) and the YC-PEM (Participation and Environment Measure - Young Children) evaluate the participation and environment of children and young people from 0 to 5 years old (YC-PEM) and from 5 to 17 years old (PEM-CY), in the perception of their caregivers. Both instruments were translated and adapted to Brazilian Portuguese. However, the multiplicity of calculations related to the scores can hinder the clinical and scientific use of the tool, a factor that motivated the development of a calculator that allows the automatic computation of results.
Objectives: To report the process of development and finalization of the calculators for the scoring of the instruments YC-PEM and PEM-CY Brasil.
Methods: This is a methodological study on the development process of calculators for the YC-PEM and PEM-CY Brasil instruments. A physical educator with experience in programming, and three physiotherapists and an occupational therapist, all three being university professors, participated. The team's discussions took place in several meetings on the Google Meet platform. For the development of the calculator, the Excel program was used.
Results: The calculators maintain the visual identity of the original instruments, and fully present the questions and answer options of the Brazilian version. Multiple choice answers are directed to an Excel spreadsheet, which stores the results of a group of subjects and allows statistical analyses. Open-ended responses allow a qualitative analysis of the aspects that help with participation. The calculators also generate individual charts and graphs that allow users to visualize participation and environmental factors related to the three sections. The greatest difficulty in this process involved the understanding of each score, for proper programming in the spreadsheet, being necessary to consult the authors of the original version to establish a consensus, which enabled a deeper understanding of the instrument.
Conclusion: The YC-PEM and PEM-CY Brasil calculators allow the remote evaluation of individuals, as well as the archiving and calculation of the results, generating spreadsheets that facilitate data analyses, and graphs and tables that allow the translation of knowledge for professionals and family members. It is expected,

therefore, that it will favor the clinical and scientific use of the instruments for assessing participation and the environment in Brazilian children and young people and, consequently, to stimulate rehabilitation actions aimed at these aspects.
Implications: In order to strengthen evidence-based practices, it is essential that standardized instruments are available in the Brazilian context. Furthermore, strategies must be created to facilitate the use of these instruments. On the other hand, the context of the pandemic reinforced the need for tools that can be applied remotely. The creation of the calculator has collaborated for the validation of the YC-PEM and PEM-CY Brasil in a broader context.
Keywords: Data analysis, Social Participation, Data Reliability

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PARTICIPATION AND ENVIRONMENT MEASURE - CHILDREN AND YOUTH (PEM-CY): VALIDATION FOR USE IN BRAZIL

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Background: Participation is a complex multidirectional construct that is influenced by social, attitudinal, and physical aspects of the environment, in addition to being an indicator of social inclusion, health and well-being. The family of participation-related constructs includes attendance and involvement in relevant activities, to capture the participatory experiences of children and youth. In recent years, instruments to assess participation in different environments have been developed, facilitating the incorporation of this assessment into the physiotherapist's clinical practice, as participation represents an important outcome in rehabilitation. The Participation and Environment Measure - Children and Youth (PEM-CY) was developed from the theoretical framework of the International Classification of Functioning, Disability and Health (ICF). The PEM-CY was translated into Portuguese, but its psychometric properties have not yet been verified in the Brazilian population.
Objective: To verify the psychometric properties of the PEM-CY Brazil (internal consistency and construct validity) in Brazilian children and young people.
Methods: Participants were 101 Brazilian children and adolescents (mean age 9.36 years, SD 3.47) with and without disabilities. Parents or guardians answered the PEM-CY Brazil questionnaire that assesses Participation (Frequency, Involvement and Desire for Change) and Environment (supports, barriers, environmental helpfulness, environmental resources, and overall environmental support). The internal consistency of all subscales was assessed using Cronbach's Alpha. Construct validity was analyzed by comparing the PEM-CY results between groups of children with and without disabilities using the Mann-Whitney or Chi-square tests, considering $p<0.05$.
Results: Internal consistency ranged from good to excellent for all subscales of the participation section (α=0.70 to 0.84) and all subscales of the environment section (α=0.53 to 0.95). The comparative analysis between groups identified that children with disabilities participated in a small number of activities (p=0.000) and were less involved in all settings (home p=0.007, school and community p=0.000); showed a lower frequency of participation in the community (p=0.000) and a greater desire to change at school (p=0.007) when compared to their peers without disabilities. The guardians of children with disabilities perceived higher barriers at home (p=0.002), school, and community (p=0.000) and fewer supports at home (p=0.001), school and community (p=0.000). The group with disabilities also reported fewer environmental helpfulness at home (p=0.005), school (p=0.000) and community (p=0.000); less environmental resources at home (p=0.002), school (p=0.000) and community (p=0.010); and fewer overall support in all settings (p=0.000).
Conclusion: The results support the reliability and validity of PEM-CY to measure participation at home, at school and in the community, and to verify the characteristics of the environment of Brazilian children and young people with and without disabilities.
Implications: The instrument represents an important resource to be used in research and in the clinical practice of rehabilitation professionals, who will be able to evaluate the participation of children and young people, as well as incorporate it as an outcome of interest in interventions.
Keywords: Child Health, Social Participation, Data Reliability

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QUALITY OF LIFE AND SLEEP OF PHYSIOTHERAPISTS ACTING ON THE FRONT LINE AGAINST COVID-19: A CROSS-SECTIONAL STUDY

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Background: The exponential increase in SARS-CoV-2 infection has impacted on a change in the professional and personal lifestyle of the world's population. Health professionals working on the front line experienced increased work hours and exposure to risk factors as a result of the high demand for severe cases. The hospital physiotherapist, one of those responsible for the therapeutic management of COVID-19, suffered repercussions from the pandemic, which possibly contributed to physical and mental exhaustion.
Objectives: To analyze the quality of life and sleep of physiotherapists working on the front lines against COVID-19.
Methods: This is a cross-sectional study, involving physiotherapists of both sexes over the age of 18, working on the front line against COVID-19 in hospital units, who agreed to participate in the research by signing the term of free and informed consent (TCLE). Sociodemographic data, quality of life using the Short Form

questionnaire (SF-36) and sleep index using the Pittsburgh were evaluated. Data collection took place from June to August 2022 via an electronic form developed by the researchers on the Google Forms platform.
Results: A total of 37 individuals were analyzed, predominantly female (81.6%) with a mean age of 30.13 ± 4.52 and training time from 1 to 5 years (55.3%), 97.4% of whom were post-graduated with the weekly workload of 30 to 60 hours (71.1%), working on duty for 24 consecutive hours. The quality of life of the evaluated individuals showed unfavorable results (<70 points) in relation to the domains: general health status, social aspects, vitality, pain, and limitation by physical aspect. Regarding sleep quality, the domains that presented the worst indices were subjective sleep quality, sleep latency and habitual sleep efficiency.
Conclusion: The challenges in coping with the pandemic associated with excessive working hours were favorable factors in reducing the quality of life and sleep of physiotherapists working on the front line.
Implications: The development of this study made it possible to evaluate the effects of the pandemic on the mental health of professionals working on the front line, which may favor the development of actions aimed at the health of workers, considering that emotional disorders can last for a while, leading to the removal of work activities.
Keywords: Quality of Life, Physical Therapists, COVID-19

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Ethics committee approval: Mauritius University Center of Nassau (n° 5.269.776)

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FUNCTIONAL CAPACITY AND QUALITY OF LIFE OF UNIVERSITY STUDENTS IN THE HEALTH AREA: CROSS-SECTIONAL STUDY

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Background: University students are subject to experiencing a change in their lifestyle during the period of adaptation and development of their professional future as a result of the demands required in the academic environment that can negatively reflect on quality of life and functional capacity. Aspects that influence poor quality of life can have a direct impact on the physical fitness of health students.
Objectives: To evaluate the functional capacity and quality of life of university students in the health area.
Methods: This is a descriptive cross-sectional study with a sample involving university students in the health area aged 18 years or over of both sexes enrolled in a private University Center in the city of Caruaru-PE who agreed to participate in the research by signing the free and informed consent form (TCLE). Functional capacity was evaluated through the six-minute walk test (6MWT) and quality of life through the Short Form questionnaire (SF-36) available online through the Google Forms® platform. Data collection took place between august and october 2022.
Results: A study with 117 participants, a mean age of 22.91± 5.38 years, predominantly female (71.8%) and mean body mass index of 24.68 kg/m^2. The greater participation in the study involved health university students from the first to the fourth period (53.8%) and the physiotherapy course (58.1%). During the assessment of functional capacity by the 6MWT, an average distance covered of 554.61m x 595.38m of predicted distance was evidenced by these university students, which corresponds to 93.85% of the predicted distance for the studied population. Quality of life, when evaluating the domains of vitality and social aspects, scored less than 50 points, which is considered a worrying result.
Conclusion: The present study presented favorable data regarding the functional capacity of these university students, however, the quality of life of these young adults showed negative outcomes in some domains with scores below expectations.
Implications: The study generated an alert about the importance of an institutional view for the development of actions that can improve the perception of quality of life and functional aspects of university students, considering that both performance and permanence in the academic field can be compromised.
Keywords: Quality of life, Students, Exercise Toleranc

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RELATIONSHIP BETWEEN FUNCTIONAL MOBILITY AND FALLS IN WOMEN WITH KNEE OSTEOARTHRITIS

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Background: Osteoarthritis is the most prevalent rheumatic illness in the population, characterized by progressive loss of joint cartilage and subchondral bone sclerosis that results in functional limitation. Among the affected joints, the knee is the most injured. Pain, muscle weakness, reduced balance and reduced movement range are the main symptoms of patients with knee osteoarthritis (KOA) and they may contribute to a decrease in functional mobility and a greater possibility of falls in this population.
Objectives: The study aims to compare the functional mobility in women with and without KOA, relating it to the number of falls.
Methods: Were chosen 71 people, who were divided into two groups, the studied one with Knee Osteoarthritis (GOAJ: n = 39; 66,8 ± 7,7 years) and the control group (GC: n = 32; 64,9± 7,1 years). The research project was approved by the local ethics committee (1.503.496/2015) and all the participants had signed the free informed consent term and agreed to join the study. Firstly, anamnesis was done to obtain personal data and the number of falls in the last 12 months. To assess functionality, the *Short Physical Performance Battery* (SPPB) was applied, consisting of three items: assessment of balance, gait speed and, indirectly, lower limb strength, through the sit-to-stand test. For statistical analysis, the T-test for Independent Samples was used, considering a significance level of $p < 0,05$.
Results: Women with KOA had a 48% lower gait speed ($p < 0,001$) and a 30% higher time to sit down and stand up from a chair for five consecutive times ($p < 0,001$), compared to the control group. No significant difference was found in the balance tests of both groups.

The group with KOA (GOAJ) showed an average of 2,7 falls in the last twelve months, while the control group (GC) showed an average of 1,4 falls. There was a negative correlation between gait speed and sitting down/standing up time with the number of falls.
Conclusion: Women with KOA have decreased functional mobility, and this may contribute to a higher occurrence of falls in this population.
Implications: The study shows that women with KOA have decreased functional mobility, which can negatively affect the performance of activities of daily living and the quality of life of this population.
Keywords: Arthrosis, Physical Functional Performance, Biopsychosocial Factors

Conflict of interest: The authors declare no conflict of interest.

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Ethics committee approval: The research project was approved by the local ethics committee of Universidade Estadual Paulista, Marília Campus, opinion number 1.503.496/2015.

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ASSOCIATION BETWEEN POSTURAL BALANCE AND FUNCTIONAL STATUS IN POST COVID-19 CONDITION IN NON-HOSPITALIZED PATIENTS

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Background: Individuals with post COVID-19 conditions risk to develop short and/or mid term neuromuscular sequels that may involve changes on balance control. The POST-COVID-19 Functional Scale (PCFS) has the potential to evaluate the general functional capacity, however, if the PCFS can also be used to measure the impact on the balance control over the post COVID-19 functionality, remains unclear.
Objectives: To investigate if COVID-19 may impact the balance control and if possible, changes are associated with the functional status of the individual estimated by PCFS.
Methods: 60 adults were spited into two groups: 30 patients on control group and 30 on post COVID-19 group. Both groups underwent clinical evaluation of balance control based on the following tests: Functional Reach Test (FRT), Berg Balance Scale (BBS), Time Up and Go (TUG), Tinetti Balance Test (TINETTI) and Mini-BESTest (MBT). Besides, the post COVID group answered the PCFS questionnaire. For data statistical analysis, it was used the Student's T Test, comparing the score found on groups' balance tests. The Pearson's correlation test was used to correlate the balance tests and PCFS. The multiple linear regression was used to identify which balance variable may play important role on PCFS' prevision, with significancy level of 5%.
Results: It wasn't found significative differences ($p>0,05$) between groups for: BBS (average ± control standard deviation and post COVID-19: 49.200±7.863 and 49.300±8.322 points); TUG (12.500± 4.925 and 11.033±5.109 seconds); TINETTI (24.467±4.890 and 25.633±3.873 points); and MBT (22.500±5.361 and 22.967±4.716 points). But, for FRT, there was significative difference (p=0,046) between groups post COVID-19 (31,333±6,563 cm) and control (28,083±5,748 cm). The balance variables showed significative correlation ($p<0,05$) and moderated with PCFS: TINETTI (r=0.584), FRT (r=±-0.542), MBT (r=-0.53), BBS (r=0.415) and TUG (r=0.368). TINETTI was the independent variable that significantly played important role on PCFS' determination (R^2 value was set from 0,368, p = 0.004).
Conclusion: The results showed that significative changes on postural stability wasn't observed among groups for most balance tests applied, except FRT. Both groups, however, presented reach on FRT above reference value, indicating low fragility and fall risk for the patients. Minor changes on functional status of post COVID-19 group (23 of 30 patients presented grade between 0 and 1) may explain similarities on body balance among groups. Moderated correlations were observed between PCFS and balance tests and, the TINETTI, seems to play important role on PCFS' determination.
Implications: In rehabilitation field, the research results indicate the PCFS' implementation to monitor functionality, covering changes on postural balance and other functional outcomes, aiming to improve evaluation methods and intervention on neuromuscular function rehabilitation on the context of post COVID-19.
Keywords: Postural balance, COVID-19, post COVID-19 condition, POST-COVID-19 Functional Scale

Conflict of interest: The authors declare no conflict of interest.

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POWERED MOBILITY FOR CHILDREN WITH CONGENITAL ZIKA SYNDROME: LEARNING AND GOAL ATTAINMENT OUTCOMES

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Background: Powered mobility training with modified ride-on cars is an innovative intervention option that aims to improve the body functions and participation of children with severe disabilities. In addition to enabling self-initiated mobility, training can result in learning gains in ride-on car use and attainment of rehabilitation goals. Due to their severe motor and cognitive impairment, children with Congenital Zika Syndrome (CZS) may benefit from interventions with modified powered ride-on cars, as such devices are more cost-effective when compared to motorized wheelchairs.
Objectives: To describe the results of a powered mobility intervention with modified motorized ride-on cars for children with CZS, considering the outcomes of goal attainment and mobility learning.
Methods: This is a pilot study with 12 weeks of intervention and 4 weeks of follow-up. The intervention was guided by a physiotherapist or occupational therapist and consisted of training sessions with modified ride-on cars, lasting 40 minutes, three times a week, at the Clínica Escola de Fisioterapia da Faculdade de Ciências da Saúde do Trairi (FACISA), in Santa Cruz-RN. The outcomes of interest were mobility learning, assessed using the "Assessment of the Use of

Motorized Mobility (ALP)-version 2.0" scale and the attainment of rehabilitation goals, assessed using the Goal Attainment Scaling (GAS). Assessments were performed by previously trained independent examiners at weeks 0, 8, 12 e 16.
Results: Four children with CZS participated, two males, aged between 3 and 6 years, three were classified as level V and one as level IV in the Gross Motor Function Classification System (GMFCS). All had moderate to severe intellectual disability, and two associated visual impairment. After the 12 weeks of intervention with powered ride-on cars, changes in mobility learning were observed, with an increment of one or two points in ALP, and clinically significant changes in GAS scores, when compared to week 0, in all participants.
Conclusion: The intervention with modified powered ride-on cars was potentially capable of increasing learning in motorized mobility and contributing to the achievement of rehabilitation goals in children with CZS. We suggest the development of clinical trials to explore the effects of the intervention on functional gains and participation of children with CZS.
Implications: The study presents a fun and low-cost intervention option, through powered mobility training with motorized ride-on cars for children with CZS and severe motor and cognitive impairment, which can be implemented in the child's natural context. In addition, the work contributes to fostering future intervention studies and contributing to evidence-based clinical practice for children with CZS in Brazil.
Keywords: Congenital Zika Syndrome, Child, Powered mobility

Conflict of interest: The authors declare no conflict of interest.
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EFFECTIVENESS OF INTERVENTIONS FOR HIGHER EDUCATION TEACHERS WITH BURNOUT SYNDROME: A SYSTEMATIC REVIEW

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Background: Burnout Syndrome is a highly prevalent condition among higher education teachers (HET) and can bring consequences such as high levels of emotional exhaustion, depersonalization and reduced professional achievement. The extent to which interventions are effective in managing Burnout Syndrome in higher education teachers remains uncertain.
Objectives: Systematically review the literature on the effectiveness of interventions for Burnout Syndrome in higher education teachers.
Methods: We systematically searched the MEDLINE, LILACS, Index Psicologia, SciELO, BVS and PubMed databases in search of randomized clinical trials on interventions in Burnout Syndrome. Full texts of included studies were screened to extract data on study design, country, type of population, number of participants, characteristics of interventions, and summary of results. The methodological quality of the studies was assessed using the Physiotherapy Evidence Database (PEDro) scale.
Results: Seven randomized controlled trials were selected, with a total of 367 participants and samples ranging from 17 to 185 participants. Five interventions were identified: Cognitive Behavioral Therapy (CBT), Multidisciplinary Meeting with Guided Discussion, Meditation, Stress Management Programs and Auriculotherapy; however, studies reported efficacy in terms of reducing Burnout Syndrome only for CBT interventions ($p < .001$ for Emotional Exhaustion; $p = .006$ for Depersonalization and $p < .001$ for Personal Fulfillment) and Multidisciplinary Meetings with Discussion Guide ($p < .001$ for Emotional Exhaustion and $p = .006$ for Depersonalization). The average score, according to the PEDro scale, was 8/10 points, ranging from 5 to 10 points.
Conclusion: As for the identified interventions, evidence was found from a small number of studies, small samples and moderate to high methodological quality that suggest that CBT sessions can be effective for Burnout as well as collective interventions of Multidisciplinary Meetings with Discussion Guide. Additionally, such interventions also proved to be effective in increasing HES engagement. Furthermore, Meditation, as an individual intervention, seems to improve anxiety and resilience.
Implications: This result implies the need for more research to be carried out to replicate the interventions discussed here and to investigate others, to improve the quality of life of higher education teachers at all stages of their teaching careers.
Keywords: Burnout syndrome, Higher education teacher, Intervention

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MAPPING EVIDENCE ON BURNOUT SYNDROME IN UNIVERSITY PROFESSORS AND ITS RELATIONSHIP WITH ERGONOMIC AND BIOPSYCHOSOCIAL FACTORS: A SCOPE REVIEW

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Background: The professional routine of university professors has been gaining prominence in research on Burnout Syndrome (BS), having been considered by the International Labor Organization (ILO) as the most prone to its development, and several studies in the last 20 years corroborate this statement. According to the World Health Organization (WHO) BS is the result of chronic stress in the workplace that has not been successfully managed.
Objectives: Map the evidence on BS in higher education teachers and its relationship with ergonomic and biopsychosocial factors.
Methods: We carried out a scope review of articles published up to 2021 in Pubmed, Medline, Lilacs and Index Psicologia databases, extracting characteristics of the population, location, study design, BS assessment instruments and synthesis of evidence regarding ergonomic and biopsychosocial factors.
Results: Eighteen studies were found in 12 countries, and most used a cross-sectional design (17/18, 94%). Among the evaluation methods used for BS, MBI - Burnout Maslach Inventory was the most used (9.75%), followed by JR-D - Work Demands—Resources (1.8%), CBI-BR - Copenhagen Burnout Inventory -Brazilian (1.8%), BAT — Burnout

Assessment Tool (1.8%). The studies revealed that BS was present simultaneously with the ergonomic factors: Week > 50 hs, Daily shift >8 hs, Recovery time between shifts, Group size > 30 students, Pressure for results, Monotony, Multitasking, Bad conditions at the Workstation, Face-to-face classes and online classes; With regard to biopsychosocial factors, the following were identified: Absenteeism, Lack of time for personal life, Exhaustion, Over 40 years old, Married, with a child < 12 years old, Sedentary lifestyle, Muscle pain, Use of medication for anxiety, depression and others. .., Not having a hobby, Self-esteem, Dissatisfaction with salary, Middle class, Urban, Smoker and Alcoholic. The studies showed a high risk of bias (selection, performance, detection, response, and confusion) and only 6 authors studied the correlation between some ergonomic and biopsychosocial factors with $p < 0.05$.
Conclusion: It is a consensus that Burnout Syndrome in higher education teachers requires more and more attention, as it may be related to ergonomic and biopsychosocial factors, however it was not possible to confirm a causal relationship, due to the fact that the tests were carried out in cross-sectional studies.
Implications: In the professional environment, ergonomic characteristics or those related to work organization deserve greater attention in future research, as well as biopsychosocial factors, as they may be strongly associated with Burnout Syndrome.
Keywords: Occupational Stress, Professional burnout, University professor

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QUALITY OF LIFE IN WOMEN IN THE POSTOPERATIVE PERIOD OF BREAST CANCER SURGERY

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Background: Significant advances in the diagnosis and treatment of breast cancer have led to an increase in patient survival. However, the treatment of breast cancer often involves a multimodal approach with surgeries and adjuvant therapies, which still have adverse effects that can affect several domains of quality of life (QoL) in the short and long term. Understanding the effects of breast cancer treatment on the QoL of these women is essential for the development of therapeutic interventions that address the needs of this population.
Objective: To assess the impact of surgical treatment on the QoL of women with breast cancer and the factors associated with a greater impact on QoL.
Methods: This is an observational study with a quantitative approach, carried out in Fortaleza/CE. Women between 18 and 80 years old, between 3 and 12 months after surgery for breast cancer and under outpatient follow-up, from May 2022 to March 2023 were included. Those with cognitive impairment assessed by the Mini-Mental State Examination (MMSE) were excluded. Sociodemographic and clinical data were collected, and the *Functional Assessment of Cancer Therapy-Breast questionnaire* (FACT-B+4) was applied through interviews to assess QoL. The Fact-B+4 score ranges from 0 to 164, in which the higher the score, the better the quality of life. The score is also evaluated in the following domains: Physical Well-being (PWB), Social/Family Well-being (SWB), Emotional Well-being (EWB), Functional Well-being (FWB), Breast Cancer Subscale (BCS) and Arm Subscale (ARM). For analysis of associations, Student's t test was used, assuming $p < 0.05$ for significance.
Results: 29 women with a mean age of 55.9±10.2 years were included. The mean FACT-B+4 total score was 104.3±16.9. The most impacted domains were ARM (16.3±3.6), FWB (17.5±4.2) and EWB (18.2±4.9). There was an association between postmenopausal status and lower scores in the EWB ($p<0.01$), FWB ($p<0.01$), PWB ($p<0.01$) and ARM ($p=0.018$) domains. Age (<60 years) was associated only with the ARM domain ($p=0.03$). Adjuvant therapy, through radiotherapy and hormone therapy, was associated with lower FWB scores ($p=0.03$; $p=0.01$ respectively), while chemotherapy was associated with lower EWB scores ($p=0.01$). There was no association between the surgical type and the axillary approach in the sample's QoL scores.
Conclusion: The FWB, EWB and ARM domains were the most affected after breast cancer treatment, which may be related to impaired self-image, autonomy and performance of activities of daily living. Age, menopausal status, and adjuvant therapy are associated with different impacts on QoL in this population.
Implications: Considering the multiplicity of factors that impact the QoL of women operated on for breast cancer is extremely important for the development of assistance and support strategies during the oncological treatment process, not only after surgery, but in the long-term during adjuvant therapy.
Keywords: Breast neoplasms, Mastectomy, Quality of life

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ASSOCIATION BETWEEN FRAILTY AND INTRA-HOSPITAL MORTALITY IN OLDER ADULTS HOSPITALIZED IN A PUBLIC HOSPITAL

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Background: Frailty is a decline in the functioning of several body systems, accompanied by an increase in vulnerability to stressors. The condition is related to high risk of falls, hospitalizations, all-cause mortality, and disability, which poses challenges to public health. There is no consensus regarding frailty. Indeed, several validated instruments based on different conceptual approaches have been developed. Professionals face a challenge when attempting to make a clinical assessment that discriminates between low and high-risk groups. There is a scarcity of frailty assessment data for hospitalized older adults. Understanding aspects related to frailty in a hospital setting is essential to providing comprehensive care to these individuals.
Objectives: Investigate the association between frailty criteria at hospital admission and intra-hospital death in older patients.
Methods: This is a longitudinal observational study of 170 older adults hospitalized in a public hospital of the Federal District,

Brazil. Frailty and mortality were the independent and dependent variables, respectively. The former was assessed using the frailty phenotype, considering unintentional weight loss, exhaustion, muscle weakness, slow gait and low physical activity level, and participants were categorized as non-frail, pre-frail or frail. Intra-hospital mortality was collected in the healthcare electronic medical chart system (TrackCare). The older patients were categorized into two groups: those that were discharged and those that died. Data analysis was descriptive and using the chi-squared, Mann-Whitney U and simple and multiple logistic regression tests. Demographic (age and sex) and clinical data (number of medications and body mass index- BMI) were collected to adjust the analyses.
Results: 7.1% of the older adults hospitalized during the study period were non-frail, 34.1% pre-frail and 58.8% frail, and 7.1% died during their hospital stay. The group that died exhibited more frailty criteria (U=510.500; p=0.006) and more frequent muscle weakness (X^2(1)=7.412; p=0.006) and slow gait (X^2(1)=5.636; p=0.030). These individuals showed no differences in age, sex, education level, BMI and medications when compared to their discharged counterparts (p>0.05). In simple regression analyses, one more frailty criterion increased the likelihood of intra-hospital death by 110% (OR=2.100 [95% CI 1.201 – 3.673]). Adjusted multiple analyses did not change the simple regression results.
Conclusion: Older adults with more frailty criteria exhibited a greater likelihood of intra-hospital death. The findings reveal the risk of intra-hospital death in hospitalized frail older patients and therefore, the need for multiprofessional monitoring of these individuals from the moment they are admitted.
Implications: Understanding frailty in a hospital setting may contribute to the development of healthcare, screening, health indicator and prevention strategies aimed at improving care and prognosis for these individuals.
Keywords: Hospitalization, Frailty, Mortality

Conflict of interest: The authors declare no conflict of interest.
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PREDICTORS OF HOSPITALIZATION AND DEATH IN OLDER ADULTS WITH COGNITIVE IMPAIRMENT

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Background: Cognitive impairment, characterized as a deficit in one or more brain functions, has been associated with greater post-hospitalization functional limitations. Hospitalization is a known risk factor for functional decline in older adults and has been linked to post-discharge disability, rehabilitation difficulties, higher mortality and irreversible, physical, functional and psychosocial consequences. However, few studies have investigated factors related to the hospitalization process in older adults with cognitive impairment.
Objectives: Identify the sociodemographic factors, clinical conditions, and sarcopenia criteria predictive of hospitalization and death in older adults with cognitive impairment.
Methods: A longitudinal observational study was conducted involving 170 older adults with cognitive impairment assessed at a specialized public hospital. The predictive variables were sociodemographic characteristics (age, sex, and education), clinical conditions (engagement in physical exercise and history of hospitalization in the last 6 months) and sarcopenia criteria (muscle strength, muscle mass and physical performance). Muscle strength was evaluated by hand grip dynamometry, muscle mass by measuring calf circumference and physical performance via the Timed Up and Go (TUG) test. The variables predicted were hospitalization and death up to one year after assessment. Analyses were performed using descriptive statistics, the independent Student's t, Mann-Whitney U and chi-squared tests and simple logistic regression.
Results: of the 170 participants, most were sedentary women, with an average age of 77.57 years and low education level, with confirmed sarcopenia in 15.9% and previous history of hospitalization in 13%. During the one-year follow-up, 15.9% (n=27) of the older adults were hospitalized and 7.6% (n=13) died. The Mann-Whitney U test showed that education level had an effect on hospitalization (U=1423.5, p=0.027) and death (U=647.0, p=0.025) in the one-year follow-up. The chi-squared test indicated that a history of hospitalization in the last 6 months was associated with hospitalization [X^2(1)=4.729; p=0.030] and death [X^2(1)=3.919; p=0.048] in the one-year follow-up period. Simple logistic regression demonstrated an association between history of hospitalization in the last 6 months and readmission during one year of follow-up (OR=2.963; 95%CI 1.076–8.165, p=0.036). Associations between education level and the occurrence of hospitalization and death at follow-up and between history of hospitalization and death at follow-up were not significant in simple logistic regression.
Conclusion: This study found that a history of hospitalization in the last 6 months was associated with hospitalization over a one-year period in older adults with cognitive impairment.
Implications: These findings reinforce the importance of recognizing a history of hospital stays as a risk factor for further hospitalization in older adults with cognitive impairment, in order to implement early interventions aimed at preventing readmission and death.
Keywords: Aged, Hospitalization, Mortality

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IMMEDIATE EFFECTS OF FUNCTIONAL ELECTRICAL STIMULATION ON THE GASTROCNEMIUS MUSCLE ON PLANTAR PRESSURES IN CHILDREN WITH CEREBRAL PALSY

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Background: Cerebral Palsy (CP) presents motor impairments as one of its main symptoms, such as the equinus gait pattern. There is a portable electrical stimulator available in the market called the Walkaide® which aims to stimulate the anterior tibial muscle. However, due to shortening and contractures, the triceps surae muscle suffers a decrease in its ability to move, resulting in hyperactivation of the anterior tibial muscle. Stimulating the triceps surae muscle can provide the necessary force for improving gait biomechanics, generating an increase in propulsion during the terminal support phase, range of motion, speed, and stride length. Unfortunately, the Walkaide® is not accessible in low- and middle-income countries like Brazil due to its cost.
Objective: To evaluate the immediate effects of a prototype portable electrical stimulator designed to activate the gastrocnemius muscle in children with Cerebral Palsy.
Methods: Three children with right-side unilateral CP (two females aged 9 and 13 years old, and one male aged 9 years old) participated in this prototype study. Plantar pressures were evaluated in a semi-static posture and during walking on the MPS Platform with and without the use of electrical stimulation on the gastrocnemius muscle. The pressures in different areas of the foot and the arch index were analyzed before and during the use of the electrical stimulator in the two conditions mentioned above.
Results: The use of electrical stimulator led to an improvement in the plantar distribution in both affected and non-affected lower limbs in static and dynamic conditions, as observed in the three children with CP evaluated. In the static condition with the stimulator, there was greater weight bearing posteriorly to the right, an increase in the contact surface, and an improvement in the arch index compared to the condition without the stimulator. In the dynamic condition, there was an increase in the contact surface of the right foot with the device, and the weight distribution was more symmetrical when compared to not using the device.
Conclusion: The use of electrical stimulator on the gastrocnemius muscle has a great potential for improving the distribution of plantar pressures, which can enable children with unilateral CP to distribute their weight to the heel. Therefore, it is believed that with time, children may show an improvement in their gait pattern.
Implications: The use of the electrical stimulator may lead to improvements in plantar pressures, allowing children with unilateral CP to discharge weight posteriorly. This could potentially replace the use of standardized orthoses, resulting in aesthetic and practical benefits. Additionally, it promotes the development of a national equipment with lower costs of production.
Keywords: Cerebral palsy, Gait, Electrical stimulator

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ASSESSMENT OF THE LONG-TERM PHYSICAL CAPACITY OF COVID-19 SURVIVORS

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Background: Post-COVID-19 syndrome (PCS) is characterized by a set of clinical findings that appear during or after infection with SARS-Cov-2 and persist after 12 weeks. The long-term consequences of COVID-19 are not fully known, but there is already evidence that the infection can deteriorate lung function, reduce functional capacity, impair quality of life and cause important emotional repercussions. Thus, there needs to be a tool to assess the course of sequelae and how limiting they may be to estimate the long-term burden of this disease. One of the tools used is the *Post-COVID-19 Functional Status Scale* (PCFS), which considers pain, emotional aspects and functional limitations of the individual.
Objectives: To build a predictive model of physical function through PCFS in patients with PCS.
Methods: Between October and March 2021, a cross-sectional study was carried out with 201 survivors of COVID-19 aged 18 years or older at Policlínica Piquet Carneiro, UERJ. The study included patients with persistent symptoms or development of sequelae beyond 12 weeks from the onset of acute COVID-19 symptoms. The meanings of each score on the PCFS scale are as follows: grade 0: no functional limitations; grade 1: negligible functional limitations; grade 2: slight functional limitations; grade 3: moderate functional limitations; and grade 4: severe functional limitations. They were also assessed for general fatigue using the Chronic Fatigue Therapy Functional Rating Scale (FACIT-F), handgrip strength (HGS), and spirometry. The inferential analysis was composed by Pearson's correlation coefficient for the association between the PCFS and the other variables. Multivariate linear regression was applied to investigate which variables were predictive of PCFS. Significance $P<0.05$ was used. The analysis was processed using JASP version 0.14.1.
Results: The number of participants classified as 0, 1, 2, 3 and 4 on the PCFS scale was 25 (12%), 40 (20%), 39 (19%), 49 (24%) and 48 (24%), respectively. The PCFS scale was significantly correlated with the following variables: FACIT-F score ($r=0.542$, $P<0.001$), HGS ($r=-0.339$, $P<0.001$), previous hospitalization ($r=0.226$, $P=0.001$), BMI ($r=0.163$, $P=0.021$) and gender ($r=-0.153$, $P=0.030$). The regression model with the highest regression coefficient ($R=0.622$) included the following variables: age, sex, BMI, FACIT-F, previous hospitalization and HGS.
Conclusion: Using the PCFS scale, we investigated the factors that contribute to a worse physical condition of patients with PCS, without previous locomotor deficiency. The results indicate that the worse the general fatigue in these patients, the worse their physical functions.
Implications: Based on these results, we propose a predictive model for the PCFS scale in patients with PCS that takes into account age, sex, BMI, FACIT-F, previous hospitalization and HGS. Due to the importance of assessing physical functioning in this patient population, the PCFS scale can be a useful tool for clinical evaluation and planning of rehabilitation strategies.
Keywords: Post-COVID-19 syndrome, Physical ability, Quality of life

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EVALUATION OF VENTILATION DURING EXERCISE TESTS IN PEOPLE WITH POST-COVID-19 SYNDROME

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Background: In addition to deconditioning, persistent low-grade inflammation following acute SARS-CoV-2 infection may contribute to systemic problems, which supports the need for further assessment of cardiopulmonary conditioning. In fact, the impairment of the respiratory system in the acute phase of COVID-19 has the potential to significantly impact functional capacity in patients with post-COVID-19 syndrome (PCS), with dynamic hyperinflation (DH) and reduced ventilatory reserve (RV).
Objective: To investigate the dynamic ventilatory responses and their influence on the functional capacity to exercise in these patients.
Methods: Between March and October 2022, a cross-sectional study was carried out with 16 patients with PCS aged ≥18 years attended at the Piquet Carneiro Polyclinica, at the State University of Rio de Janeiro. Patients with a history of COVID-19 pneumonia with persistence of respiratory symptoms after 3 months of the acute phase were included. Patients without a previous diagnosis of COVID-19 confirmed by RT-PCR (reverse-transcription polymerase chain reaction) and those who failed to perform the protocol tests were excluded. Patients underwent impulse oscillometry (IOS), spirometry, 6-minute walk test (6MWT) with Spiropalm®-6MWT, and cardiopulmonary exercise test (CPET). A ≥100 ml decrease in inspiratory capacity (IC) during exercise was defined as HD. Ventilatory reserve (VR) indicates how close minute ventilation (VE) approaches maximum voluntary ventilation (MVV) during a given activity and was calculated as the difference between MVV and VEpeak ([MVV-VEpeak]/MVV); VR <30% was considered to be ventilatory limitation on exertion.
Results: Median age and time since diagnosis of COVID-19 were 57 (50−59) years and 98 (93−106) days, respectively. Regarding spirometry, 12.5% and 50% of the participants had an abnormal spirometry and an altered IOS, respectively, and the difference in resistance between 4 Hz and 20 Hz (R4-R20) was detected in 31.2% of the participants. cases. Regarding cardiopulmonary performance during exercise, the median distance in the 6MWT was 83 (78−97) % of predicted, with HD and VR <30% observed in 62.5% and 12.5% of participants, respectively. In CPET, the median peak oxygen consumption (VO2peak) was 19 (14−37) ml/kg/min. There was a significant correlation of the distance covered in the 6MWT with both R4-R20 (rs = -0.499, P = 0.039) and VO2peak (rs = 0.628, P = 0.009).
Conclusion: Our findings suggest that HD and, to a lesser extent, low VR are contributors to poor exercise performance that is associated with peripheral airway disease.
Implications: Based on these results, we obtained precise ventilatory and metabolic measurements, which we can consider as an important factor for more assertive exercise prescription during the rehabilitation of these patients. Moreover, these results are promising if we consider that they were obtained with simple, cheap, and portable ventilatory and metabolic measurement systems, easily applicable in real-world environments.
Keywords: Post-COVID-19 Syndrome, Functional capacity, Cardiopulmonary stress test

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EFFECTIVENESS OF TELE-INTERVENTIONS FOR BEHAVIOR CHANGE AND SELF-MANAGEMENT IN STROKE SECONDARY PREVENTION: OVERVIEW OF SYSTEMATIC REVIEWS

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Background: Recurrent stroke contributes to the high burden of stroke. Secondary prevention guidelines recommend addressing modifiable risk factors. Despite the increased use of tele-interventions with individuals after stroke, the use of these interventions for behavior changes and self-management in secondary prevention has a low level of evidence in these guidelines.
Objective: To critically appraise and consolidate evidence from systematic reviews (SR) on the effectiveness of theoretically informed person-centered tele-interventions for behavior change and self-management in stroke secondary prevention.
Methods: An overview of SR that followed the Cochrane Guidelines was performed, involving the identification, screening, and synthesis of SR (with and without meta-analyses) and of eligible primary studies from the SR. When it was possible, meta-analyses were performed with data from primary studies for the outcomes of interest: primary (reduction in mortality, recurrent stroke and other cardiovascular events), secondary (adherence to health behaviors), and tertiary (control of cardiovascular risk factors).
Results: 12 SR and 14 primary studies were included. Seven SR were rated as having a high risk of bias, mainly because they did not define the eligibility criteria. Six SR performed meta-analyses with the outcomes of interest. Only one SR performed meta-analysis with primary outcomes (mortality, recurrent stroke and other cardiovascular events), and no significant difference between groups was found. Secondary outcomes: significant improvement was found for medication adherence, but it was not found for management of depressive symptoms. Tertiary outcomes: meta-analyses were performed for systolic and diastolic blood pressure (SBP and DBP), cholesterol and blood glucose and significant improvements were found for SBP and low-density lipoprotein (LDL). The methodological quality of the primary studies showed that blinding of participants and personnel, and of outcome assessment were the domains with the highest risk of bias. Meta-analyses of tele-interventions compared with usual care were performed for recurrent stroke, medication and healthy eating adherence, physical activity participation, and control of cardiovascular risk measures (SBP, DBP, total cholesterol and triglyceride). A significant difference between group, favoring tele-intervention, was identified for improve in medication adherence (mean difference, MD: 0.41; confidence interval of 95%, 95%CI: 0.16, 0.65; I^2: 69%) and healthy eating adherence (standardized MD, SMD: 0.41; 95%CI: 0.19, 0.63; I^2: 17%), and for the decrease in SBP (MD: -9.18; 95%CI: -12.96, -5.39; I^2: 0%).
Conclusions: Theoretically informed person-centered tele-interventions for stroke secondary prevention resulted in significant improvement in medication and healthy eating adherence, and a

decrease in SBP. Future studies using these interventions should consider other risk factors related to stroke secondary prevention.
Implications: This overview contributes to increasing the strength of recommendation of the use of theoretically informed person-centered tele-interventions in stroke secondary prevention. Furthermore, it guides future research indicating the need to investigate the effect of strategies involving these interventions on other outcomes that did not show significant improvement.
Keywords: Stroke, Telehealth, Secondary Prevention

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THE RELATIONSHIP BETWEEN URINARY INCONTINENCE AND DYNAPENIA IN ELDERLY WOMEN: A CROSS-CROSS STUDY

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Background: Urinary Incontinence (UI) is characterized by the International Continence Society (ICS) as any involuntary loss of urine, and several factors may be linked to this phenomenon, such as age, menopause, and some chronic diseases. However, the relationship between dynapenia and UI has been highlighted in the literature. Dynapenia, defined by the loss of muscle strength, is an event inherent to aging, and this muscle weakness, when in specific regions, such as the pelvic floor, can lead to greater UI events.
Objectives: To verify the association between dynapenia and the presence of UI in elderly women living in the city of Porto Alegre, RS.
Methods: Descriptive and cross-sectional study. The population consisted of women over 60 years of age living in a neighborhood in the city of Porto Alegre, RS. A descriptive questionnaire was used to characterize the subjects and the UI assessed through the International Consultation on Continence Questionnaire – Short Form (ICQ-SF). Muscle strength was assessed using the Sit and Stand Test (SST) and Hand Grip Dynamometry using a Jamar brand dynamometer.
Results: 298 elderly women were assessed, and in 78 (33%) the presence of UI was identified. The mean age of women without UI was 75.03 + 7.1 years versus 75.03 + 6.87 years with UI (p= 0.287). There were no significant differences in any of the sample characterization variables, demonstrating that the samples were homogeneous. As for TSL, there was no statistical significance (p=0.086). In Dynamometry, there was a significant difference in favor of the group without UI (p=0.020). The Chi-square test was used to compare the presence of UI with dynapenia, where dynapenic elderly women with UI were 36%, and dynapenic women without UI were 21% (X^2=0.0132).
Conclusion: The study indicated that dynapenic elderly women had a higher prevalence of UI, however, other studies seeking to analyze the prospective behavior of these variables should be developed, with larger samples and in different places, in order to reduce the influence of habits and environment.
Implications: UI has a high prevalence in the elderly and its relationship with dynapenia must be considered, and this outcome must be considered in the geriatric evaluation and rehabilitation.
Keywords: Urinary Incontinence, Muscle strength, Elderly

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URINARY INCONTINENCE IN PATIENTS INFECTED BY SARS-COV 2 AFTER HOSPITAL DISCHARGE: A CROSS-SECTIONAL STUDY

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Background: The SARS-CoV-2 epidemic, which killed more than 15 million people worldwide, in addition to high mortality, brought a series of post-COVID consequences. According to the current literature, the main persistent symptoms after infection are fatigue, dyspnea and muscle pain. Another important possible damage, still little discussed in the literature, refers to the association of SARS-CoV 2 infection with the prevalence of Urinary Incontinence (UI). This condition is more prevalent among women, ranging from 25 to 45% in the global population, affecting the health and quality of life of this population.
Objectives: To identify the prevalence of UI in patients infected with SARS-CoV 2 after hospital discharge and describe the sociodemographic and clinical profile of these subjects.
Methods: Descriptive and cross-sectional study. The population consisted of individuals after hospital discharge due to SARS-CoV-2 infection. Data collection was carried out via telephone call by a previously trained researcher, after hospital discharge, using a structured instrument asking sociodemographic data, previous conditions, hospitalization conditions, UI assessment and use of the Functional Status Scale (PCFS), from September 2021 to October 2022. The sample size was calculated by using the study by Dhar et al. (2020) as a reference. Adopting a significance level of 85%, acceptable error of 5% and a prevalence rate of 7%, indicating a sample size of 54 subjects. To verify the association of variables with the presence of urogenital disorders, the Chi-Square, Fisher's Exact, Student's t, Mann-Whitney and Multivariate Analysis tests were applied.
Results: The sample consisted of 32 women (56.4 ±11.3 years) and 27 men (49.5 ±10.7 years), the women being 7 years older (p=0.022). The prevalence of UI in the sample was 15.25%, with only women affected. The presence of UI pre versus post hospitalization for SARCoV-2 did not change (15.25% and 15.25%, respectively). During hospitalization, 28.8% of the sample required care in the Intensive Care Unit (ICU), with an average of 26.4 ± 40 days of hospitalization. As for the disability condition evaluated with the PCFS scale, grades 3 and 4 (moderate and severe) were identified in 44.1% of the individuals. In the multivariate analysis, in the model with different variables (age, hypertension, kidney disease, insomnia and emotional disorders), only the emotional aspects showed a significant association between the outcomes (p=0.034).
Conclusion: The prevalence of UI among the assessed sample did not change after hospital discharge due to hospitalization due to COVID-19. Women had a higher prevalence of UI, with emotional aspects being the variable associated with outcomes.
Implications: The consequences of COVID-19, especially in post-discharge patients, need to be better investigated. Some limitations,

such as sample size and patient profile, may have influenced the results of this study.
Keywords: COVID-19, Acute Post-COVID-19 Syndrome, Urinary incontinence

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: The study was approved by the Research Ethics Committee of the Municipal Secretariat of Porto Alegre, under registration number 4.858.291.

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COMPARISON OF BALANCE AND MUSCLE STRENGTH IN COMMUNITY-DWELLING OLDER ADULTS CLASSIFIED BY THE PHYSICAL FRAILTY PHENOTYPE: PRELIMINARY RESULTS

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Background: Frailty is a clinical condition that results in increased vulnerability to adverse health outcomes in older adults, such as falls, hospitalization, disability, and mortality. Thus, great efforts have been made to prevent the transition from the robust elderly to the frail state. We know that balance and muscle strength are often addressed to prevent these negative outcomes, however, it is unclear if there are differences between groups classified by physical frailty.
Objectives: To compare balance (One-leg standing, postural stability in gait, sensory interaction in balance, chair sit-up) and muscle strength (trunk extensors-TE, hip extensors-HE, hip abductors-HA, knee extensors-KE, and plantar flexors-PF) in community-dwelling older adults classified as robust (non-frail) and vulnerable (pre-frail or frail)).
Methods: Cross-sectional observational study with community-dwelling older adults (60 years or older) of both sexes, with independent gait and recruited by convenience. One-leg standing balance (30 seconds), postural stability in gait (Functional Gait Assessment), sensory interaction in balance (Modified Clinical Test of Sensory Interaction and Balance), sit-up from a chair five times, and muscle strength (maximal isometric contraction) of TE, HE, HA, KE, and PF, expressed by torque and normalized by body weight (microFET2 hand dynamometer) were assessed. The robust and vulnerable elderly were classified by physical frailty phenotype. Mann-Whitney analysis was used to compare the variables between groups. The significance level was set at 5%.
Results: 118 older adults were evaluated, of these 35 were robust and 85 were vulnerable. Descriptive and comparison data were expressed as mean ± standard deviation for the robust and vulnerable groups, respectively: one-leg standing balance (18.17 seconds ± 2.09; ± 10.73 seconds ± 1.16; p=0.005), postural stability in gait (23.80 ± 0.73; 21.41 ± 0.55; p = 0.014), sensory interaction in balance (113.83 seconds ± 1.98; 102.98 seconds ± 2.30; p=0.001), chair sit-up (10.78 seconds ± 0.30; 13.77 ± 0.61; p = 0.001), TE muscle strength (1.17 ± 0.081; 0.98 ± 0.04; p = 0.069), HE (0.47 ± 0.46; 0.42 ± 0.02; p = 0.463), HA (1.01 ± 0.05; 0.88 ± 0.03; p = 0.068), KE (1.23 ± 0.09; 1.04 ± 0.04; p= 0.111), PF (1.59 ±1.10; 0.82 ± 0.41; p = 0.059). According to the results only the balance variables showed difference between the groups.
Conclusion: The older adults vulnerable to physical fragility had worse one-leg standing balance, less postural stability during gait, less sensory interaction on balance and spent more time to get up from a chair when compared to the robust elderly. Parameters of muscle strength showed no differences between the groups. Continuation of the study with increased sample size is necessary for confirmation of the results. Support from CAPES, FAPEMIG, CNPq.
Implications: From the findings found, it highlights the importance of evaluating balance in several perspectives in older adults' people vulnerable to physical frailty. Further studies may address whether interventions directed at these variables can modify frailty status.
Keywords: Frailty, Balance, Muscle strength

Conflict of interest: The authors declare no conflict of interest.
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EFFECT OF SARCOPENIA ON SURVIVAL, HOSPITALIZATION, AND FUNCTIONAL CAPACITY OF ADULTS AND ELDERLY WITH LUNG CANCER

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Background: Lung cancer is associated with numerous metabolic abnormalities that can cause changes in body composition and neuromuscular capacity. Sarcopenia refers to the progressive loss of strength, muscle mass, and performance, being an independent predictor of poor prognosis in patients with lung cancer, in addition to being considered a risk factor for increased chemotoxicity.
Objective: To evaluate the effect of sarcopenia on survival, length of hospital stays and functional capacity of patients with lung cancer.
Methods: This is a systematic review developed according to the Cochrane manual for systematic reviews with the following eligibility criteria: (P) patients with lung cancer; (E) sarcopenia; (C) absence of sarcopenia; and (O) survival, length of hospital stay and functional capacity. Searches were conducted in the databases: CINAHL, Cochrane Library, EMBASE, IBECS, LILACS, Livivo, PEDro, PubMed/MEDLINE, SciELO, Scopus and Web of Science. Study screening was performed on the Rayyan platform by two independent reviewers. Potentially eligible studies were read in full for final decision. Disagreements were resolved in consultation with the senior reviewer. Methodological quality was observed using a Newcastle Ottawa scale for cohort studies. Data were organized and analyzed in an electronic spreadsheet. The research protocol is registered in the PROSPERO database (CRD42022355782).
Results: The initial search retrieved 3,542 titles. The final selection resulted in 14 studies included for the qualitative synthesis. The included studies are observational, predominantly with a retrospective cohort design, and have good methodological quality (7 to 8 points). The final sample consisted of 4,062 patients with lung cancer (age 66.3 ± 5.4 years), of which: 1,343 were sarcopenic and

2,719 were non-sarcopenic. The survival rate of patients with lung cancer and sarcopenia was lower than that of patients with lung cancer and non-sarcopenia after 5 years of follow-up (19.4% vs 28.9%, $p < 0.001$). Functional performance, assessed by the distance covered in the six-minute walk test, was lower in the sarcopenic group compared to the non-sarcopenic group (516 $\pm$ 75m vs 526 $\pm$ 74m, $p < 0.001$). There was no difference in length of stay (11 vs 11 days, $p = 1.000$).
Conclusion: Sarcopenia reduces survival in patients with lung cancer and results in lower functional capacity, with no influence on the length of hospital stay.
Implications: We emphasize the importance of synthesizing information about the effect of sarcopenia associated with lung cancer to contribute to the clinical decision-making of professionals who work in this health condition and population, helping professionals to base their interventions on evidence.
Keywords: Sarcopenia, Lung cancer, Survival

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not applicable.

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CARDIAC TELEREHABILITATION ON FUNCTIONAL AEROBIC CAPACITY AND CLINICAL VARIABLES IN PEOPLE WITH HEART FAILURE

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Background: Heart failure causes the highest rate of mortality and disability among people with some type of cardiovascular disease. As a non-pharmacological intervention, people are referred to cardiac rehabilitation programs in order to improve clinical outcomes; telerehabilitation is an alternative for those people with less adherence and limited travel to health centers.
Objectives: The objective of this study was to determine the effect of cardiac telerehabilitation on functional aerobic capacity and clinical variables in people with heart failure.
Methods: Randomized controlled clinical trial for 12 weeks in people with heart failure previously diagnosed by a cardiologist, with hemodynamic stability who entered a cardiac rehabilitation program for the first time at a clinic in Cali, Colombia. Institutional ethics endorsement (#17.115) was obtained, and all subjects signed informed consent. Through random sampling, people were divided into two groups: conventional cardiac rehabilitation (CR) and cardiac telerehabilitation (CTR) who received virtual technology assistance through "Google Meet". The primary variable was the distance covered in the 6-minute walk test and the secondary variables: some clinical variables (risk factors, symptoms, left ventricular ejection fraction (LVEF), weight, BMI, abdominal circumference, Sit to Stand, Total Cholesterol, HDL, LDL and Triglycerides). Subjects performed 20 minutes of upper and lower limb muscle strengthening, continuous aerobic exercise with 50-70% of HRmax reserve or perceived exertion less than 13/20 on the Borg scale. The t test for intragroup paired samples and the t test for intergroup independent samples were performed at the beginning and end of the intervention. There was significance of 95%.
Results: 31 people with heart failure were included, 14 in the CR group and 17 in the CTR group, 71.4% and 64.7% of them men, respectively p-value=0.690. The mean age for CR was 60.86$\pm$11.12 and CTR 60.18$\pm$11.54 p-value=0.870. The most frequent symptom for CR was lower limb fatigue (71.4%) and for CTR dyspnea (70.6%) p-value=$>$0.05. The most frequent risk factor for the CR group was sedentary lifestyle (92.9%), for the CTR group it was arterial hypertension (88.2%) p-value=$>$0.05. There were significant changes at the beginning and end of the study in the variables covered distance CR pre-251.53$\pm$38.49, CR post 360.59$\pm$58.47, CTR pre-245.68$\pm$ 60.16, CTR post 342.85$\pm$ 72.70 and Vo2e CR pre 7.71$\pm$1.18, CR post 10.09$\pm$ 1.63, pre CTR 7.54$\pm$1.8, post CTR 9.61$\pm$2.03 showing p-value$<$0.05. Variables such as sit-to-stand repetitions, waist circumference, HDL showed significant changes for both groups p-value $<$0.05. LVEF showed significant changes only in the CR group.
Conclusion: Cardiac rehabilitation and telerehabilitation in people with heart failure cause significant changes in functional aerobic capacity, waist circumference, and HDL; Additionally, conventional cardiac rehabilitation presented significant improvements in LVEF.
Implications: Cardiac telerehabilitation causes changes similar to conventional rehabilitation in people with heart failure and can be used as a tool that allows a higher percentage of participation and adherence in people with difficult access to rehabilitation centers.
Keywords: Hearth Failure, Telerehabilitation, Cardiac Rehabilitation

Conflict of interest: The authors declare no conflict of interest.
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THE EFFECT OF DIFFERENT TYPES OF BIOFEEDBACK ON THE LEVEL OF MUSCLE ACTIVITY DURING STANDING BALANCE

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Background: Biofeedback allows the individual to gain awareness and directly control a biomechanical or biological variable of interest. The biofeedback of postural performance has aroused a great interest of Rehabilitation Sciences due to its potential impact on the control of postural stability. While it is well established that biofeedback seems to limit body movements in orthostatism, it is not clear whether such a postural strategy occurs at the cost of increasing the level of muscle activity and whether it differs between different biofeedback techniques applied to postural control.
Objectives: This study is aimed at investigating the effect of different types of biofeedback techniques on the level of muscle activity postural sway during standing.
Methods: Three adults were tested in three standing conditions: (1) eyes open (EO); (2) biofeedback of acceleration (BFac), consisting of reducing the linear acceleration of the trunk in the anteroposterior (AP) direction; (3) biofeedback of laser (BFlaser), consisting of pointing a laser as close as possible to a target from the right wrist. The acceleration components were collected through a triaxial

accelerometer (TrignoTM Wireless EMG System Overview, Delsys, USA; ±2*g*), positioned roughly at L5 level, and the variability (standard deviation) calculated in the AP direction. Surface electromyograms (EMG) were collected from the medial gastrocnemius (MG) and tibialis anterior (TA) muscles bilaterally from the Trigno system (1.926Hz). The EMG's RMS amplitude was obtained to evaluate the degree of muscle excitation. Due to the small sample size, the statistical analysis involves data description by means of median (minimum – maximum).
Results: In relation to EO (8.41, 7.56 – 8.98 gx10-3), the standard deviation of ACAP reduced with BFac (median, min-max: 7.82, 4.32 – 11.45 gx10-3) and increased with BFlaser (9.83, 6.50 – 11.01 gx10-3). For the right body side, the RMS of TA increased with the biofeedback (BFac: 6.33, 2.99 – 9.67rms; BFlaser: 6.11, 2.31 – 8.32rms) when compared to EO (5.07, 2.11 – 7.16 rms). For the MG, while RMS was smaller with BFac (5.53, 2.95 – 17.84 rms), the RMS was higher with BFlaser (7.35, 2.93 – 16.95 rms) in relation to EO (6.63, 2.51 – 23.92 rms). For the left side, both ankle muscles showed a smaller RMS with BFac (TA: 4.29, 3,70 – 7.07rms; MG: 6.22, 2.53 – 10.93rms) and with BFlaser (TA: 3.59, 2,32 – 3.59rms; MG: 6.90, 2.38 – 15.44rms) do que EO (TA: 5.18, 4.50 – 6.70rms; MG: 8.31, 2.01 – 23.29rms).
Conclusion: These qualitative considerations indicate BFac seems to reduce the size of postural sway, while BFlaser increases it during standing balance, when compared to EO. Furthermore, an asymmetric postural activation was revealed regardless of biofeedback. TA and MG seem to reduce the level of muscle excitation at left, while they are more active at right.
Implications: Findings suggest that EMGs may provide different estimates of muscle arousal if collected unilaterally during upright posture with biofeedback. Ongoing study with more individuals to advance knowledge about the potential of biofeedback in improving postural control and reducing the risk of falling.
Keywords: Postural Control, Biofeedback, Electromyography

Conflict of interest: The authors declare no conflict of interest.
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RELATIONSHIP BETWEEN MAXIMUM MUSCLE STRENGTH AND FREQUENCY SPEED OF KICK TEST FOR BLACK BELT TAEKWONDO ATHLETES

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Background: Taekwondo is a predominantly aerobic combat sport modality (58-66%) in which high-intensity actions are performed with the contribution of the anaerobic alactic system (26-30%) followed by the contribution of the anaerobic lactic metabolism (4-5%). High-intensity actions are performed repeatedly with muscular power and short duration. Thus, seeking to understand the relationship between the variables that represent maximum muscle strength, and the aerobic capacity of taekwondo athletes is relevant for a better understanding of the modality.
Objectives: The aim of this study was to determine whether the 10-second Frequency Speed of Kick Test ($FSKT_{10s}$) correlates with maximal muscle strength in black belt taekwondo athletes.
Methods: Nine male athletes (age: 20.3 ± 5.2 years; height: 177 ± 7.2 cm; body mass: 71.8 ± 15.3 kg and practice time: 9.6 ± 7.2 years) who competed at the state level or more prominently (international: 73%; national: 9%; state: 18%) participated in the study. All were free of any lower limb injury and had no neuromuscular disorder. Maximum muscle strength was achieved in the half-squat exercise, as previously described in the literature. $FSKT_{10s}$ is 10s long, alternating semi-circle kicks between right and left segments on a dummy using a simple torso protector, as often seen in taekwondo matches. Each participant was instructed to read and sign the Informed Consent Form with information about the procedures and risks associated with the study. The Kolmogorov-Smirnov test was used to assess data normality. Pearson's correlation was used to determine the relationship between selected variables. Correlations were classified as follows: 0.0 – 0.1 (trivial), >0.1 – 0.3 (minor), >0.3 – 0.5 (moderate), >0.5 – 0.7 (large), >0.7 – 0.9 (very large), and >0.9 – 1.0 (perfect). For all analyzes an $\alpha = 5\%$ was adopted.
Results: The athletes reached 133±33 kg (95% CI: 108 – 158) during the maximal strength test performed in the half-squat exercise. Values are expressed in relation to the body mass value (1RM/Body mass: 1.9±0.3, 95% CI: 1.6 – 2.1) and allometric scale (1RM/(body mass)0.67 : 7.6±1.4, 95% CI: 6.5 – 8.7). Pearson's correlation showed a statistically significant correlation between the maximum muscle strength test and the $FSKT_{10s}$. The correlation between 1RM/body mass was r = 0.72 (p=0.014). The correlation between 1RM/ $(\text{body mass})^{0.67}$ was r = 0.84 (p=0.004). Both correlations were classified as 'very large'.
Conclusion: There is a strong correlation between maximal muscle strength and $FSKT_{10s}$.
Implications: The strong correlation between the variables studied indicates that athletes with muscular strength developed at optimum levels also improve the frequency of blows applied in a short period of time. Thus, coaches and strength and conditioning coaches will be able to help taekwondo athletes to improve their performance by applying means and training methods aimed at developing maximum muscle strength at optimal levels.
Keywords: Combat sport, Martial art, Sports performance

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Federal University of the Jequitinhonha and Mucuri Valleys; CAAE: 53465321.0.0000.5108

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AN ANALYSIS OF THE VARIABLES OF TACTICAL AND PHYSICAL PERFORMANCE IN THE U-17 MEN'S WORLD CUP

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Background: The tactical and physical demands of a soccer game are of interest to coaches and trainers for better prescription of the physical training process and understanding of the game's demands. When discussing the demands for games played by base categories, information is scarce. In this study, we will investigate correlations

between physical and tactical variables of under-17 soccer players who competed in the 2019 FIFA Soccer World Cup.
Objectives: The objective of the present study was to analyze and associate the variables of physical performance (total distance covered) and technical performance (ball possession, number of passes, shots on goal, compaction with the ball and compaction without the ball) of male soccer players during the FIFA U-17 World Cup.
Methods: Were analyzed 24 national teams participating in the under-17 football world cup, held in 2019. We selected from the technical report, accessed from the official website of the competition (www.fifa.com). Pearson's correlation test (r) was used to describe the association between variables. The correlation coefficient was classified as follows: 0.0 – 0.1 (trivial), >0.1 – 0.3 (minor), >0.3 – 0.5 (moderate), >0.5 – 0.7 (large), >0.7 – 0.9 (very large), and >0.9 – 1.0 (almost perfect). All procedures were performed in IBM SPSS (IBM SPSS Statistics – Version 20.0).
Results: The total average distance covered during the competition was between 106 and 121 km per match. The average ball possession for each team was 36 – 61% per game. There were between 315 and 588 passes and 6 – 24 shots on goal per match. The average compaction per match with ball possession was between 708 and 1081 meters^2, and without ball possession was 500 – 744 meters^2. Correlations classified as 'very large' were observed between possession of the ball and passes (r= 0.814), 'great' between total distance and compaction without the ball (r= -0.599) and passes and compaction without the ball (r= -0.555), 'small' between total distance and possession of the ball (r= 0.219), total distance and compaction with the ball (r= -0.103) and passes and compaction with the ball (r= -0.254) and 'trivial' between total distance and shots a goal (r = -0.075) and possession and compaction without the ball (r = -0.001).
Conclusion: It was observed that the exchange of passes is an important foundation for maintaining possession of the ball, exploring spaces on the field of play and reducing physical demand.
Implications: Coaches and trainers can develop the physical capabilities of players to serve as a basis for executing technical and tactical demands. Thus, based on our results, we suggest that technicians and trainers search for means and methods of physical and tactical training that are more efficient for the age group in question. In this way, players will be able to fulfill their duties during the game, pass with greater possibilities of reaching the goal and finish on goal when they are better positioned. The choice of this strategy will make it possible to improve the performance of the team/players during matches during the competition.
Keywords: Sports performance, Demands of the game, Youth sports

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PELVIC FLOOR MUSCLES CONTRACTION MAY STIMULATE THE CARDIAC AUTONOMIC CONTROL OF HEART RATE IN POSTMENOPAUSAL WOMEN: A CROSS-SECTIONAL STUDY

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Background: Pelvic floor muscles (PFM) contraction is often assessed during the quantification of PFM function, and it is the principal mechanism of the pelvic floor muscles training, as well as the first line of treatment of several PFM dysfunctions. However, comparisons about the effects of these muscle contractions on the cardiac autonomic modulation (CAM) in pre- and postmenopausal women are still not known.
Objective: To compare the effects of a PFM contractions protocol on heart rate variability (HRV) in rest and recovery, in apparently healthy pre- and postmenopausal women.
Methods: This is a cross-sectional study it was conducted at the Women's Health Research Laboratory, Federal University of São Carlos, Brazil. We recruited 37 apparently healthy women, aged between 20-70 years old, with a body mass index lower than 30 kg/m^2 and without history of pelvic surgery. Participants were divided into pre-menopausal group (PG=23, 24±3 years) and postmenopausal group (PMG=14, 57±7 years). The PFM protocol consisted of 8 min at rest in supine position, 10 sustained PFM contractions of 5 seconds each and 8 min recovery. The heart period (HP) was recorded during the protocol through a cardiac monitor (Polar® RS800CX Kempele, Finland). Resting and recovery HP variabilities (256 consecutive points of the tacogram) were assessed by representative time-domain indices (RMSSD and SDNN) and frequency domain indexes (LF and HF abs and normalized units).
Results: PMG showed reduced time domain indices compared with PG ($P<0.05$). Frequency-domain indexes showed that PFM contractions can affect the cardiac autonomic control, in recovery condition, by increasing sympathetic cardiac modulation (LFabs) and reducing cardiac vagal modulation (HFabs), $p<0.05$, in PG only.
Conclusions: Postmenopause is associated with a marked reduction in heart rate variability indices. The PFM contraction can affect cardiac autonomic control physiologically, to meet the metabolic demands during exercise; however, reflecting on the increasing sympathetic cardiac autonomic and reducing vagal modulation in the recovery, mainly in PG.
Implications: Long-term safety, as well as interventions based on PFM to improve CAM in postmenopausal women, should be investigated in the future.
Keywords: Heart rate variability, Pelvic floor muscles exercise, Women

Conflict of interest: The authors declare no conflict of interest.
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PHYSIOTHERAPISTS' PERCEPTIONS ABOUT THE INTERPROFESSIONAL INTERACTION WITH PHYSICIANS IN THE FIELD OF WOMEN'S HEALTH

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Background: The presence of a physiotherapist in multidisciplinary groups responsible for the treatment of female pelvic floor muscle disorders is recommended by international clinical guidelines. However, the perception of physiotherapists regarding this interprofessional interaction has not yet been reported. Knowing the benefits of the interdisciplinary approach for patients, it is necessary to investigate the self-reported perception of professionals in relation to this collaboration.

Objectives: To analyze the perception of physiotherapists who work in the area of Women's Health about the interdisciplinary interaction with physicians.

Methods: This is a Cross-sectional study. This study included Brazilian physiotherapists who work in the area of Physical Therapy in Women's Health, in the legal exercise of their profession. Data collection was carried out online using a semi-structured questionnaire with objective questions, inserted in Google Forms, which evaluated the interprofessional relationship between physicians and physiotherapists. Data were analyzed according to frequency and percentage.

Results: A total of 104 physiotherapists were included, 89 (85.5%) of whom reported experience in working in collaboration with physicians and 96 (93%) received patients through medical referral. Most professionals evaluated the interdisciplinary relationship between physicians and physiotherapists as regular, 42 (40.4%) participants considered the interaction positive, to add benefits to the patient. Most physiotherapists consider that the relationship between physicians and physiotherapists is adequate, however, they believe that it could improve, especially if this closeness between professionals were highlighted in the recommendations of clinical guidelines on the interdisciplinary patients' management (n=67; 64.4 %). In addition, 21 (20.2%) participants stated that both professionals (i.e., physicians and physiotherapists) are important in-patient care and that they have an excellent relationship with medical professionals. However, 16 (15.4%) professionals stated that they do not work together with medical professionals but would like the opportunity to work in partnership. Most participants considered the quality of medical training as good (38.5%), followed by regular (36.5%), poor (16.3%) and excellent (5.7%).

Conclusions: Physiotherapists evaluated the relationship with physicians from the Women's Health area as positive, however, they believed that this interaction might be improved based on the approach of interdisciplinary patient' management, that could be emphasized in the recommendations of clinical guidelines. In addition, professionals showed an interest in interacting with medical professionals.

Implications: According to the physiotherapists, the interaction between physiotherapists and physicians in the area of Women's Health is considered positive for the patient, however, professionals believed that some limitations can be clarified from the strengthening of this relationship and from recommendations of guidelines on the interdisciplinary interaction.

Keywords: Patient care, Interdisciplinary Practice, Women's Health

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Ethics committee approval: Ethics Comitee from the Federal University of São Carlos (CAAE: 4 0121620.3.0000.5504).

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DETERMINANTS OF ACCESS TO REHABILITATION PROFESSIONALS BY POST-STROKE INDIVIDUALS IN THE FIRST SIX MONTHS AFTER HOSPITAL DISCHARGE

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Background: Currently, the best strategy to deal with disabilities after stroke is rehabilitation. National and international clinical guidelines recommend that all post-stroke individuals have access to rehabilitation professionals within 72 hours after hospital discharge. In addition, access should be continued until the individual's functional goals are achieved. However, the determinants of access to rehabilitation professionals by post-stroke individuals in middle-income countries, where the burden of this disease is high, are little known.

Objectives: To identify the determinants of access to rehabilitation professionals by post-stroke individuals one, three and six months after hospital discharge in Brazil and to compare the access obtained in each period with that referred by the multidisciplinary team at the time of hospital discharge.

Methods: A longitudinal, prospective, and exploratory study, carried out in Belo Horizonte, Minas Gerais, Brazil. Individuals after primary stroke, without previous disabilities were included. During hospital discharge, the number of rehabilitation professionals referred by the multidisciplinary team was recorded. One, three and six months after hospital discharge, individuals were contacted by telephone to identify the rehabilitation professionals accessed. Possible determinants of access were classified according to Andersen's behavioral model for using health services and included: a) predisposing factors: age, sex, education, and belief that it could improve with treatment; b) need factors: stroke severity and level of disability; c) facilitating factors: socioeconomic status, disposable income for health care and quality of care provided by rehabilitation professionals. Multiple linear regression model and Wilcoxon test were used (α=5%).

Results: 201 individuals were included. Higher level of disability and stroke severity explained 31%, 34% and 39% of access to rehabilitation professionals one, three and six months after hospital discharge ($p<0.01$) respectively. Three months after discharge, having less education added 4% of explanation to the variation in access ($p<0.01$). In all evaluated periods, the number of professionals accessed was significantly lower than recommended at discharge ($p<0.01$).

Conclusion: In general, individuals with a more severe stroke and a higher level of disability were those who had greater access to rehabilitation professionals one, three and six months after hospital discharge. In addition, the comprehensiveness care for post-stroke

individuals were compromised was compromised in all periods evaluated, indicating that current legislation in Brazil on post-stroke individuals care was partially complied.
Implications: Access to rehabilitation professionals has been directed equitably and in insufficient quantity to post-stroke individuals. Therefore, health management services must direct human and financial resources to expand immediate and comprehensive access to rehabilitation professionals for all post-stroke individuals after hospital discharge. These resources can improve the resolution of the transfer from hospital care to community care, as recommended.
Keywords: Stroke, Stroke rehabilitation, Access to rehabilitation

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HOW DO THE PHYSIOTHERAPISTS AT A SPECIALIZED REHABILITATION CENTER PERCEIVE THE CARE NETWORK AND THE FAMILY?

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Background: The Specialized Rehabilitation Centers (CER) are the points in the network responsible for promoting attention and care for People with Disabilities (PwD), but their work goes beyond this task, being an important place for approaching families of PwD and a privileged locus for articulating the care network. Health care networks (RAS), more specifically, Care Networks for PwD, are one of the ways to promote comprehensive, longitudinal, and continuous care for PwD. In this way, professionals working in the CER, including physiotherapists, must be familiar with the management of articulation with networks. The physiotherapist is an agent within this web of care and the way he perceives the families of PwD and their interactions with the network can be fundamental for the establishment of practices that are expected in terms of the performance of professionals in the CER.
Objective: To find out, through the set of individual experiences of physiotherapists, the senses and meanings attributed to the physiotherapist's relationships with the care network and with families.
Methods: It is a qualitative, descriptive, and exploratory study, theoretically and methodologically supported by the content analysis proposed by Bardin. For this research, participant observation and interviews were adopted as techniques, guided by a previously defined script. The locating context of the research was a CER in the state of Paraíba - PB, where 13 physiotherapists from a Rehabilitation sector were interviewed.
Results: The study reveals that there is still a gap between the care currently provided by CER physiotherapists and the biopsychosocial approach. Physical therapists face difficulties in understanding and performing articulations with the network and centralize this role in the social worker. Regarding the family, they recognize the central role of the mother in care but have difficulty perceiving the burden on her and the need for a better division of care between family members, finally highlighting a utilitarian relationship with the family, required to support therapies, but away from discussions about the care provided to PwD.
Conclusion: Family and Care Network are two fundamental elements for the work in the CER, but they are still opaque in the view of physiotherapists. Because the family is seen, sometimes, only in the figure of the mother and the hammock is an entity still little known by physiotherapists.
Implications: The results of this work can be used in the permanent health education process at the CER to reflect on changes in the work process of physiotherapists with regard to families and to instigate the process of bringing the CER professionals closer to the whole of network, since many of these services already exist in the logic of an independent rehabilitation service, formally disconnected from other services.
Keywords: Physiotherapy, Disabled People, Integrality in Health

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PHYSIOTHERAPISTS AT THE SPECIALIZED REHABILITATION CENTER: LOOKING AT THEMSELVES AND OTHER PROFESSIONALS WHEN OFFERING CARE

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Background: The physiotherapist's care practices for People with Disabilities (PwD), over time, have been undergoing transformations in the search for the provision of comprehensive care centered on the ideas of the biopsychosocial approach, being produced not only by the normative prescriptive act, but also from establishing a connection between the broader context of the internal and external network of services aimed at PwD and, in the interaction with professionals and with the community to which the service is offered. The Specialized Rehabilitation Centers (CER) are points of the care network and propose to offer comprehensive care services to (PwD). Integral care takes place from the attribution of health care considering the human being in its entirety and, as a result, the services also need to see and formulate their provision of care in an expanded and comprehensive way.
Objective: To know, through the set of individual experiences of physiotherapists, the meanings attributed to the physiotherapist's relationships with his own work, with other colleagues and with the institution.
Methods: This is a qualitative, descriptive, and exploratory study, theoretically and methodologically supported by the content analysis proposed by Bardin and the phenomenological theory of Alfred Schutz and Munhall. For this research, participant observation and interviews were adopted as fieldwork techniques, guided by a previously defined script. The locator context of the research was a CER in the state of Paraíba - PB. Thirteen physiotherapists from a Rehabilitation sector were interviewed.

Results: The study shows that there are still difficulties in offering comprehensive care to users in the CER. CER physiotherapists have problems with internal communication and with the care network, in addition to difficulties in operationalizing interprofessional work; and that the physiotherapeutic practice in the CER is still very dependent on equipment and technologies.
Conclusion: The knowledge of the particular contexts contained in the physiotherapists' experiences allowed us to identify that there are still barriers to providing expanded and comprehensive care focused on the biopsychosocial model for PwD.
Implications: Generating discussions with themes provided from the individual experiences of physiotherapists provides greater understanding of the nuances of institutional disputes, thus extending greater possibilities to subsidize the process of permanent education in health, fostering discussions about the guise of practices of health, improvements in decision-making to improve the organization and work process of CER physiotherapists and provide professionals to reflect on their work process to produce better care in the biopsychosocial perspective of People with Disabilities.
Keywords: Physiotherapy, Rehabilitation Centers, Biopsychosocial Models

Conflict of interest: The authors declare no conflict of interest.
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ACUTE EFFECT OF AEROBIC AND/OR RESISTANCE EXERCISE ON BLOOD GLUCOSE IN INDIVIDUALS WITH TYPE 2 DIABETES: A SYSTEMATIC LITERATURE REVIEW

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Background: Type 2 diabetes (T2DM) is the most prevalent type of diabetes worldwide. Its treatment aims to control glycemic levels, with regular physical exercise being one of its pillars. The hypoglycemic effect of physical exercise varies according to the intensity, duration, type, and time of day it is performed.
Objectives: Synthesize the scientific evidence on the effect of a single session of continuous (AEc) or interval (AEi) aerobic exercise and/or resistance exercise (RE) on post-exercise glycemia in individuals with T2DM.
Methods: The study protocol (CRD42022289985) followed PRISMA guidelines. The search strategies were elaborated from the acronym PICO (P: individuals $\geq$ 18 years old with DM2; I: a single session of aerobic and/or resistance exercise; C: no exercise or any exercise that did not meet the characteristics of the intervention; O: glycemia measured before and up to 24h post-exercise). The electronic databases CINAHL, Cochrane Library, EMBASE, Google Scholar, LILACS, MEDLINE/Ovid, SciELO, SPORTDiscus, and Web of Science were searched, including randomized and non-randomized clinical trials published from the inception of the databases until February 2022, without limitation of language. The "Risk of Bias" tool was used to assess the risk of bias in the included studies. Reduction or no significant change in post-exercise glycemia is expressed as (↓) or (↔), respectively.
Results: 25 articles published between 1997 and 2021 were included from 6,237 retrieved from the literature. The total sample consisted of 424 participants (men = 290, women = 119, unreported = 15) aged between 21 and 70 years, with mean values of glycated hemoglobin between 6.0±0.3% and 10.4± 3.0% and body mass index between 22.2±2.3 and 37.0±5.7 kg/m^2. The duration of the exercise sessions varied between 10 and 60 minutes, with moderate to high intensities, and most (72%) were performed in the morning. Thirteen studies investigated AEc vs. control [glycemia: AEc ↓, control ↔ (n=10); AEc and control ↔ (n=3)]; five investigated AEi vs. control [glycemia: AEi ↓, control ↔ (n=2); AEi and control ↔ (n=3)]; three studied AEc vs. AEi vs. control [glycemia: AEc and AEi ↓, control ↔ (n=2); AEc, AEi, and control ↔ (n=1)], three investigated RE vs. control [glycemia: RE and control ↔ (n=3)], and one study investigated AEc vs. RE vs. AEc+RE vs. RE+AEc vs. control [glycemia: AEc and RE isolated and combined ↓, control ↔]. The significant reduction in glycemia was up to 24 hours post-AEc, up to 30 minutes post-AEi, up to 60 minutes post-RE, and up to 45 minutes after AEc and RE combined. The risk of bias was low in 5%, some concerns in 85%, and high in 10% of the included studies.
Conclusion: Sequentially, the most recurrent findings were that (1) a single isolated AEc session and (2) a single isolated AEi session can promote a significant reduction in post-exercise glycemia in individuals with T2DM, with the duration of this effect longer after isolated AEc.
Implication: The daily practice of aerobic exercises is essential for treating T2DM.
Keywords: Diabetes Mellitus, Type 2, Exercise, Systematic Review

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COGNITIVE AND VISUAL INTERACTIONS IN THE DECLINE OF POSTURAL STABILITY IN HEALTHY OLDER ADULTS

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Background: Preserved postural control is essential for older adults` functionality and social participation. Activities of daily living are commonly performed in dual-task situations and usually studied on movement, such as walking, but the interplay between cognitive tasks and vision for static balance control in older adults remains to be studied.
Objectives: This study investigated the interactions between cognitive task and visual inputs on upright postural control during aging.

Methods: 64 healthy older adults performed postural stability assessment in an upright position on a stabilographic platform (Force Platform, EMG Systems) and a performance-based balance assessment (Mini-BESTest). Analysis was performed using a within-subject 2 × 2 factorial design experiment, including visual condition (Eyes-Open or Eyes-Closed) and task condition (single- or dual-task). We performed two-way repeated measures analysis of variance (ANOVA) and correlation analysis to analyze the Center of Pressure (COP) variables and Mini-BESTest results.
Results: Postural control decreased when participants performed cognitive tasks or had their eyes closed. The interaction of task condition and visual condition were detected and showed that when older adults performed the cognitive task with eyes-closed, COP total displacement and anteroposterior (AP) velocity showed a higher postural sway.
Conclusion: Cognitive task performance reduces the upright postural control of older adults in a quiet standing position, and the interaction between cognitive demand and visual information performance influences postural balance in older adults. Additionally, the weak correlations between Mini-BESTest and COP suggest the need for complementary assessment to better screen older adults' populations in health services assistance.
Implications: The decrease in static balance due a cognitive task and the interaction between the cognitive task and the visual information indicate the need for preventive strategies in primary health care to maintain postural control, even in healthy older adults. The weak correlations between the clinical test used (Mini-BESTest) and the gold standard postural control assessment toll (force platform) indicate the need for complementary evaluation, but mainly, claim for the wide adoption of preventive strategies dedicated to balance.
Keywords: Postural Balance, Aging, Dual-task

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PSYCHOLOGICAL AND PAIN PROCESSING FACTORS IN PATELLOFEMORAL PAIN: SEX DIFFERENCES AND CORRELATION WITH CLINICAL OUTCOMES

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Background: Patellofemoral pain (PFP) is a multifactorial condition involving psychological factors (e.g. kinesiophobia and catastrophism) and pain processing factors (eg, hyperalgesia), which seem to be increased in individuals with PFP. Studies suggest that these factors appear to differ between men and women in other populations. Considering that PFP is twice as prevalent in females as in males, it is possible that sex influences psychological and pain processing factors and their relationship with clinical outcomes (e.g. pain and function) in individuals with PFP.
Objectives: The aim of this study was to compare the levels of kinesiophobia, catastrophism and pain pressure threshold (PPTs) between men and women with and without PFP and to investigate whether these outcomes are correlated to pain, function, and quality of life (QoL) in men and women with PFP.
Methods: 65 women and 38 men with PFP, 30 women and 30 men without PFP aged 18-40 years were enrolled in this cross-sectional study. The levels of kinesiophobia, catastrophism, pain, function and QOL were assessed by the Tampa Scale of Kinesiophobia, Pain Catastrophizing Scale, Visual Analog Pain Scale, Anterior Knee Pain Scale and the Medical Outcome Short-Form 36, respectively. PPTs were obtained with a digital algometer on the contralateral shoulder and patella. Generalized linear models (GzLM) were used for comparison analyzes while Spearman's test was used for correlation analyses.
Results: Women and men with PFP had greater kinesiophobia (CI: 1.88, 10.33; 1.55, 10.37), catastrophism (CI: 4.90, 14.01; 8.63, 27.78) and smaller Patellar PPTs (CI: -1.71, -.36; -1.43, -.04) compared to asymptomatic controls. Women with PFP had lower shoulder PPTs than men with PFP (CI: -1.89, -.74), which was not observed for psychological factors. In women with PFP, kinesiophobia and catastrophism correlated with pain (rho= .44 to .53), function (rho= -.55 to -.58) and the physical component of QoL (rho= -.63 to -.65). For men with PFP, only catastrophizing correlated with pain (rho= .42) and function (rho= -.43). Patellar and shoulder PPTs had only weak correlations with pain, function and QoL.
Conclusion: Individuals with PFP showed alterations in psychological and pain processing factors when compared to asymptomatic controls, although the presentation of psychological factors did not differ between genders, only for PPTs. However, it is important to note that psychological factors correlated differently with clinical outcomes in men and women with PFP.
Implications: Interventions focused on psychological and pain processing factors are recommended for individuals with PFP. Our results corroborate with these recommendations. Furthermore, our results are the first to indicate that interventions focused on kinesiophobia may be especially important for women with PFP, since higher levels of kinesiophobia are not directly correlated to worse levels of pain and function in men with PFP. Future clinical studies are needed in this area.
Keywords: Pain, Kinesiophobia, Catastrophism

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Ethics committee approval: School of Science and Technology, São Paulo State University (FCT/Unesp) in Presidente Prudente (approval number 4.649.629).

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ADAPT PROJECT - USABILITY OF THE ADAPTED MOTORIZED CAR FOR MOBILITY OF CHILDREN WITH CEREBRAL PALSY

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Background: Cerebral Palsy (CP) refers to a group of developmental disorders that affect movement and posture due to non-progressive impairment in the brain during childhood, causing children and adolescents with this condition to experience restrictions in participation and limitations in performing activities. Children classified in Levels IV and V, in the Gross Motor Function Classification System (GMFCS), have limited participation due to their dependence on mobility. This lack of mobility or locomotion in some way affects cognitive development, learning, independence, and autonomy. In

this sense, the ADAPT extension and research project was created, which aims to promote early, motorized, and low-cost mobility, and the participation of children with disabilities who don't walk or who use assistive devices for mobility.
Objectives: To evaluate the usability of motorized cars to be propelled by different types of adapted switches by the ADAPT project in children with CP classified as GMFCS IV or V.
Methods: Children with CP classified as GMFCS IV or V, enrolled in the ADAPT project and who received the adapted motorized car, participated in this study. They were evaluated before and after using the motorized car, through a screening form and the Assessment of Learning Powered mobility use (ALP – scoring between 1 and 7). The Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST 2.0 – reference value between 0-5; scores higher than 4 indicate satisfaction with the assistive technology), was individually answered by parents or caregivers, by Google Forms, with the support of a researcher to clarify possible doubts.
Results: Four children with a diagnosis of CP, with a mean age of 5 years and classified by the GMFCS level IV or V, participated in this study. According to the ALP, all children were at level 1 (learner) at the beginning of the evaluation and after the intervention, they progressed to level 3 (novice). In QUEST 2.0, the total score of the questions obtained an average of 4.17 ($\pm$0.23), which means that families were between quite satisfied and completely satisfied with the adapted motorized car offered by the ADAPT project.
Conclusion: The usability of the motorized car adopted by the ADAPT project was proven, since all children improved in the use of the switches and their families were satisfied, resulting in a good evaluation of the service provided by the ADAPT project and the adapted motorized car after using it.
Implications: The idea of the ADAPT project to adapt and motorize non-electric cars allows more children to have access to this mobility, regardless of their economic condition, providing benefits to the population in general.
Keywords: Cerebral palsy, Mobility, Child

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OPINIONS OF BRAZILIAN SPORTS PHYSIOTHERAPISTS ON UPPER EXTREMITY PHYSICAL PERFORMANCE TESTS

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Background: The literature describes more than ten upper extremity physical performance tests that are characterized by being low-cost, quick, and easy to administer. However, there are discussions about the applicability of the tests in clinical practice due to their inability to reproduce the sports-specific movement and the lack of reference values.
Objectives: To evaluate the opinion of Brazilian sports physiotherapists regarding the frequency, timing, and difficulties in using upper extremity physical performance tests in clinical practice, as well as to investigate which of the tests available in the literature are being used more or less frequently.
Methods: The study design was cross-sectional. Physiotherapists working in the orthopedic or sports field were invited to fill out an online questionnaire. The frequency question was multiple choice, allowing participants to select one of five options ranging from never to always. The timing question was multiple choice, allowing participants to select all three options: assessment, rehabilitation, and return to sport. The question about difficulties was multiple choice, allowing participants to click on only one of the following options: "yes", "a little", or "no". The first two options directed the participant to an optional open question to report the difficulties. As for the question regarding which test, they use, the names and figures of each of the ten tests were presented, and the participants answered whether or not they used them. The present study included the participation of physiotherapists who treated at least 1% of athletes per month, but for this abstract, the responses of physiotherapists for whom athlete treatment represented 50% or more of the services rendered per month were analyzed descriptively.
Results: The answers of one hundred sports physiotherapists were analyzed, the majority of whom were male (67%), worked in the state of São Paulo (32%), and had an average age of 33 years with 8 years of experience in the physiotherapy area. The physiotherapists answered that they frequently use the tests (37%), mainly for assessment purposes (85%), and the majority reported not having difficulty applying the tests (57%). The physiotherapists who reported having difficulty pointed out the lack of reference values, adequate space, evaluation time, and knowledge about the tests as a challenge in clinical practice, as well as the inability to reproduce the sports-specific movement and the lack of adaptation to different body types. The most commonly used test was the "Closed Kinetic Chain Upper Extremity Stability Test" (CKCUEST) (86%), while the least used was the "Upper Body Push and Pull Strength Ratio" (23%).
Conclusion: In conclusion, physiotherapists whose treatment of athletes represented 50% or more of the treatments per month, despite reporting some difficulties, frequently use upper extremity physical performance tests, mainly the CKCUEST, to evaluate their athletes.
Implications: This abstract showed that physiotherapists who treat athletes are aware of and use upper extremity physical performance tests, but some encounter difficulties in implementing them in clinical practice. Therefore, further research in this area may provide reference values for the Brazilian population.
Keywords: Surveys and Questionnaires, Athletes, Physical Functional Performance

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PHYSIOLOGICAL EFFECTS RELATED TO THE USE OF HIGH-FLOW NASAL CANNULA IN PRETERM INFANTS: INTEGRATIVE REVIEW

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Background: The high-flow nasal cannula (HFNC) is a non-invasive ventilatory support that provides ventilation and oxygenation in an

air flow greater than that generated spontaneously, also delivering humidified and heated air at temperatures close to 36.5°C with a programmed fraction of inspired oxygen. At first, HFNC emerged as an alternative to replacing CPAP (continuous positive airway pressure) in preterm infants. For a better understanding and safe clinical application, it is extremely important to search for its real physiological effects for use in the Neonatal Intensive Care Unit.
Objectives: To review in the current literature what are the physiological effects of usinga high-flow nasal cannula when applied to preterm infants.
Methods: This is an integrative literature review, in which scientific articles from journals indexed in the Bireme and Pubmed library and in the Scielo and PEDro databases, published between 2012 and 2022 were used.; published in Portuguese, English and Spanish, whose objective was to investigate the effects of HFNC in newborns with less than 37 gestational weeks.
Results: Six articles were selected that fit the inclusion criteria and that update knowledge about the physiological effects. Beneficial effects such as improved oxygenation and respiratory rate, lower incidence of injury to the nasal mucosa, effective alveolar ventilation, increased pulmonary pressure, washing of the nasopharyngeal dead space and possible harmful effects such as pneumothorax, pneumo-orbitis, pneumocephalus, subcutaneous emphysema, apnea, and bradycardia.
Conclusion: It is concluded that the use of a high-flow nasal cannula in preterm infants has beneficial effects and is a safe resource if used through individualized prescription. Most of the research compares it with CPAP, and when performing this comparison, it was observed in most studies that it reduces the risk of nasal trauma, facilitates ventilatory mechanics and provides greater comfort. However, it has been analyzed that flow rates greater than 8 liters per minute can have negative effects. It is essential that further research be carried out to understand the physiological effects of this therapy, providing an increasingly safer practice.
Implications: When planning ventilatory support for premature newborns, one of the main concerns that the physiotherapist must pay attention to is the risks that may arise. HFNC has been gaining notoriety in hospitals, especially after its use in the Covid-19 pandemic, and researching it in depth, investigating its implications in the body, whether or not it favors adequate development of the newborn is necessary. In short, when researching the subject, professionals working in the Neonatal Intensive Care Unit will be able to have a clear understanding of the repercussions on the physiological system with the use of this therapy.
Keywords: Oxigentherapy, Premaure, Respiratory

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COMPARISON OF THE EFFECTS OF TWO GROUPS OF SUSPENSION TRAINING ON PAIN IN WOMEN WITH CHRONIC LOW BACK PAIN: A PILOT STUDY

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Background: Low back pain is a disabling disease that originates from multifactorial aspects and directly interferes with the daily life of those who suffer from it.
Objectives: To compare the effects of two suspension training programs on pain in women with chronic low back pain.
Methods: Pilot study in which female participants, aged 18-49 years, with chronic low back pain (CLBP) of unspecific origin were selected. As inclusion criteria, participants should be at least moderately active according to the human activity profile (HAP) and have pain >3 according to the Numeric Pain Rating Scale (NPRS). After the evaluation, the participants were randomized into 3 groups: control group (CG), suspension training group 1 (STG1) and suspension training group 2 (STG2). STG1 performed the training with progression of exercise difficulty, while STG2 performed the program with progression of the number of repetitions every 4 weeks. The training consisted of 24 sessions, twice a week, for 12 weeks. Each session lasted approximately 50 minutes and was divided into 5 minutes of warm-up, 40 minutes of suspension training and 5 minutes of relaxation. Exercises were performed for upper limbs, trunk and lower limbs. The NPRS evaluation was carried out before the start of treatment and after the end of training (12 weeks).
Results: So far, 11 women have participated, 4 in STG1, 4 in STG2 and 3 in CG. The mean age was 31±09 years and the location of the pain was predominantly bilateral. No significant difference was found in the NPRS after training: STG1 (4±3.75 vs 4±1.50), STG2 (4±5.50 vs 4±3.50), CG (3±3.67 vs 3± 3.33) (Wilcoxon test, $p>0.05$). The intergroup analysis also showed no significant difference (Kruskall Wallis test, $p>0.05$).
Conclusion: So far, suspension training has not shown significant results in improving low back pain and there is no significant difference between the effects of STG1 and STG2.
Implications: This study allows us to present suggestions for suspension training exercises that can be prescribed to women with chronic low back pain.
Keywords: Low back pain, Pain measurement, Suspension training

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Acknowledgment: Not applicable.
Ethics committee approval: Not reported.

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EFFICACY OF MOBILE-HEALTH INTERVENTIONS ON PAIN AND DISABILITY OF INDIVIDUALS WITH CHRONIC LOW BACK PAIN: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Background: Low back pain is the main cause of disability in the world, causing serious socioeconomic and health systems impact. Individuals with chronic conditions have been widely affected by the pandemic. In this context, mobile health (*m-Health*) has

become popular. Despite the considerable number of applications for low back pain available in the app store, their effectiveness has not been established and there is a lack of evidence regarding the effectiveness of the isolated use of mobile applications in the self-management of low back pain.
Objectives: Investigate the effectiveness of interventions using mobile health in improving pain and disability of individuals with chronic low back pain, compared to usual healthcare strategies or no treatment.
Methods: A systematic review (PROSPERO-CRD42022338759) with meta-analysis comparing *m-Health* to usual care or no intervention. The search terms used were related to low back pain and *m-Health*. Pain intensity and disability were included as primary outcomes, and quality of life as a secondary outcome. Only randomized clinical trials (RCT) were included, and the primary outcomes were pain intensity and disability, and the secondary outcome was quality of life. Searches were carried out in the following databases, without date or language restriction: PubMed, SCOPUS, EMBASE, PEDro, Cochrane and Opengray, in addition to studies' references. The selection was performed using the Rayyan software, by two independent reviewers (screening of abstracts and full-text reading). The risk of bias was analyzed using the PEDro scale, by two independent reviewers, considering each individual item. Conflicts were resolved by consensus, at all stages. Data were summarized descriptively and through meta-analysis (pain and disability). In the meta-analysis, eligible studies were combined considering clinical and methodological homogeneity. The certainty of evidence was assessed using GRADE.
Results: 1,824 relevant publications were identified. After excluding duplicates and screening by title and abstract, 18 were eligible for full-text reading. Five RCTs were included, totaling 894 participants (n: 447 allocated to the *m-Health* group and n: 445 to the usual care group) and they had similar methodological structure and interventions. Follow-up ranged from 6 weeks to 12 months. The studies did not demonstrate significant differences for pain (MD -0.86; CI95% -2.29;0.58) and disability (SMD -0.24; CI95% -0.69; 0.20) when comparing *m-Health* and usual care. Most studies showed biases, with emphasis on non-concealed allocation and non-blinding of the outcome assessor. The certainty of the evidence was rated as low for the analyzed outcomes.
Conclusion: m-Health alone was not more effective compared to usual care or no treatment in improving pain intensity and disability in individuals with low back pain. Due to the biases found and the low certainty of the evidence, the evidence remains inconclusive and future high-quality clinical trials are needed.
Implications: We demonstrated that currently, *m-Health* does not have consolidated evidence that allows the recommendation of isolated use in the management of people with low back pain. Our findings demonstrate that there are indications of clinical benefits from the use of *m-Health*, though further studies are needed. Furthermore, we emphasize that research could investigate the complementary effects of *m-Health* on the self-management of this population.
Keywords: Mobile Health, Low Back Pain, Pain Management

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CLINICAL AND SOCIODEMOGRAPHIC DESCRIPTION OF WOMEN WHO INDUCED THEIR LABOR WITH MISOPROSTOL IN A PUBLIC HOSPITAL IN THE FEDERAL DISTRICT

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Background: The induction of labor can be performed with the aim of initiating a vaginal delivery, a method defined by cervical maturation, through digital examination. As labor induction is an intervention, it is expected that it will come from a clear medical recommendation. Therefore, we were interested in understanding the profile of women admitted to the Obstetric Center with the use of misoprostol, an induction method that stimulates cervical preparation.
Objectives: Describe clinically and sociodemographic pregnant women that had labor induced by misoprostol in a public hospital in Distrito Federal, in 2019, differing the profile from the one's that had vaginal birth to the one's submitted to cesarean section.
Methods: This study consist in a descriptive, cross-sectional, retrospective research. Data were collected by the nursing records from the maternity. The inclusion criteria consist in labor induced using misoprostol with living newborn and from a single-fetus pregnancy.
Results: 309 women met the inclusion criteria of the study, with a higher prevalence of the age group between 20 and 34 years old (64,1%), brown skinned (64,1%), 9 to 11 years of education (53,7%), single marital status (42,1%), residence at a distance greater than 45 kilometers from the hospital (51.8%), with a minimum of 6 prenatal appointments completed (79.6%), between 37 to 40 weeks of pregnancy (75,1%), primiparous (50.2%), with gestational disease (50.8%), without previous cesarean section (97.7%) or previous disease (77.0%), with presence of a companion during labor (92.2%) and without the use of oxytocin after misoprostol (50.5%). Among these women, 72.2% had vaginal delivery as an outcome (223), and 27.8% evolved to a cesarean section (86). In the group that evolved to vaginal delivery, 42.60% were primiparous, 56.95% were multiparous, 56.95% are multiparous, 46.18% developed gestational disease, 53.36% were not diagnosed with gestational diseases. Among those who evolved to a cesarean section, 69.77% were primiparous, 30.23% were multiparous, 62.79% had gestational disease and 37.20% did not. Data missing to complete 100% are missing data.
Conclusion: The differences between the two groups were the parity and gestational diseases, because in the one's who achieved the vaginal birth, multiparous women and/or those who didn't developed gestational diseases were more prevalent, while women that had cesarean section were, most of them, primiparous and/or with a gestational disease. Regardless the misoprostol's use it's contraindicated in cases of previous cesarean section, 1,9% of the sample were women with this history.
Implications: There is a need for better hospital induction and childbirth protocols. In addition to new actions directed at pregnant women, with a focus on prenatal education. Analytical studies are also suggested, as well as the training of professionals to complete the hospital and public policies evolution to improve rates related to childbirth, such as the presence of more physiotherapists in maternity.
Keywords: Induced, Labor, Misoprostol

Conflict of interest: The authors declare no conflict of interest.
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CLINICAL AND SOCIODEMOGRAPHIC PROFILE OF WOMEN WHO HAD VAGINAL BIRTH IN A PUBLIC HOSPITAL IN DISTRITO FEDERAL: A PRELIMINARY STUDY

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Background: In 2020, 47,44% of deliveries in Distrito Federal were vaginal according with the Live Birth Information System (SINASC). The cesarean sections exceeded three times the rate recommended by the WHO of 15%. To encourage the vaginal delivery in Brasil, programs, such as Rede Cegonha of SUS, were implemented to reinforce the importance of vaginal birth and the improvement in prenatal care until 2 years after birth. This study accompanies the caracteristics and impacts of vaginal birth.
Objectives: Describe the vaginal birth parturient' profile from a public hospital in Distrito Federal from January to June of 2020.
Methods: It's an observational and cross-sectional study, that search through secondary data to describe the parturient' s sociodemographic and clinical profile that gave birth between January and June of 2020. The inclusion criteria were vaginal birth with living newborn. Twin birth and illegible medical records were the exclusion criteria.
Results: Six hundred medical records met the inclusion criteria. The most prevalent group age for vaginal birth was 52,83% of women between 20 and 29 years old, with adolescents (14 to 19 years old) representing 12,83%. To identify the social demographic profile, about 65% identified themselves as brown-skinned, 52% were single and 45,67% were from Águas Lindas de Goiás. Regarding educational level, 52,33% had completed high school and 94,67% of the deliveries occurred with a companion. Concerning clinical data, 63% of the women were multiparous, 90,17% were over 37 weeks of pregnancy, 38% of deliveries were induced and 26,50% used some kind of anesthesia. As for childbirth positions, 68,67% were on the semi-sitting position, 92,67% were not instrumented and 56,67% had perineal lacerations being the second-degree – laceration of the vaginal mucosa and muscles of the pelvic floor being the most prevalent (32,50%). In only 3,67% episiotomy was performed. The average weight of the newborn was of 3,18 Kg, with 90,16% weighting more than 2500g. The average length, head circumference and first APGAR of newborns were 48,46 cm, 34,18 cm and 8,26, respectively.
Conclusion: Most of the vaginal births were at term, and the most frequent birth position was semi-sitting. Regardless it's a Distrito Federal's public hospital, almost half the patients were from Goiás state. It is worth mentioning that adolescent between 14 to 19 years old maintains a percentage over 10% in the last 3 years of data in the first 6 months. The perineal injuries are still prevalent in more than 50% of the cases, and studies about the possible factors should be done.
Implications: With the presented data, it is noticed the need of implement actions about sex education and family planning to the teenager public, given that there's a significant percentile of parturient in this age group. Furthermore, it should be sought to understand the high index of women that suffered perineal injuries in this period, to implement preventive measures.
Keywords: Pregnant Women, Natural Childbirth, Health Profile

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: This study was approved by the Ethics and Research Committee from Faculdade de Ceilândia (CEP/FCE), with CAAE number 80704617.5.0000.8093.

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PROFILE OF HEALTHY HABITS OF INDIVIDUALS AFTER STROKE AND THEIR KNOWLEDGE ABOUT THIS HEALTH CONDITION: PRELIMINARY RESULTS

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Background: The recurrent stroke presents a high burden, mainly in developing countries, such as Brazil. Secondary prevention guidelines guide the adoption of a healthy lifestyle and having knowledge about stroke to control risk factors for recurrent stroke. Therefore, it is important to identify the profile of healthy habits and knowledge to direct the use of related interventions.
Objectives: To describe the profile of healthy habits and knowledge about stroke among individuals after stroke in a Brazilian metropolis.
Methods: Cross-sectional study, which recruited individuals two years after the stroke, aged $\geq$ 20 years, that received their first attendance in a stroke unit in the metropolis of Belo Horizonte (MG). For data collection, questions from the App "Stroke Riskometer" and from previous studies were used. Data were collected via telephone call and operationalized through absolute and relative frequency.
Results: Seventy-three individuals (63$\pm$15 years old, 52% male) were included until now, and 7 (10%) cases of recurrent stroke were identified. As for habits, 64 (88%) reported not smoking, of these, 40 (55%) stopped smoking more than a year ago and 24 (33%) never smoked. Regarding alcohol consumption, 54 (74%) reported do not consume and, of these, 32 (59%) stopped consuming and 22 (41%) never consumed. As for eating, just over half (n=48, 66%) reported have adequate eating and 43 (59%) consume 2-3 fruits or vegetables/day. As for the physical activity practice, 29 (40%) reported practice it and, of these, 15 (52%) practice 2.5 hours/week and 11 (38%) between 1-2 hours/week. Just over half (n=45, 62%) reported to have not experienced significant emotional stress/depression for a year. As for knowledge, just over half reported know what a stroke is (n=42, 58%) and its signs and symptoms: difficulty speaking/understanding/articulating speech (n=48, 66%), loss of strength in arm (n=48, 66%) and smile/crooked mouth/face asymmetry (n=56, 77%). Most said they knew that smoking (n=62, 85%), alcohol consumption (n=55, 75%), inadequate eating (n=57, 78%), not practicing physical activity (n=59, 81%) and mental stress (n=60, 82%) are risk factors for stroke.
Conclusion: The habits that need more attention are healthy eating, alcohol consumption and mainly physical activity. Secondary prevention actions should also promote knowledge about what

stroke is and its signs and symptoms. Most claimed to know that unhealthy habits are risk factors for the occurrence of stroke. However, an important amount of subjects (approximately 20%) stated that they did not have this knowledge and lacked this type of information. As the study is ongoing, these results should be interpreted with caution.
Implications: The results of this study contribute to the direction of actions for secondary prevention of stroke. Future studies should investigate whether having knowledge about stroke promotes the adoption of a healthy lifestyle.
Keywords: Stroke, Healthy lifestyle, Knowledge

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THE PAINDETECT QUESTIONNAIRE TRULY IDENTIFIED PRESERVED CONDITIONED PAIN MODULATION IN MOST PATIENTS WITH MUSCULOSKELETAL PAIN

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Background: Neuropathic-like symptoms patients had more unfavorable pain features than nociceptive patients. PainDETECT questionnaire have been used to assess the central sensitization sign and symptoms. Moreover, deficient conditioned pain modulation is common in several neuropathic-like symptoms patients. However, whether the painDETECT questionnaire can identify impairment of the conditioned pain modulation it is still unknown.
Objectives: The current study aimed to evaluate the diagnostic accuracy of the painDETECT questionnaire in detecting the impairment of the conditioned pain modulation in participants with musculoskeletal pain.
Methods: A diagnostic accuracy study was conducted on 308 participants with musculoskeletal pain enrolled consecutively in outpatient departments. The painDETECT questionnaire (index method) was compared with the cold pressor test, the psychophysical test used to assess the conditioned pain modulation (reference standard).
Results: Most participants were female (n = 220, 71.42%) and had a mean age of 52.21 (±15.01). One hundred seventy-three (56.16%) participants were classified as nociceptive pain, 69 (22.40%) as unclear, and 66 (21.42%) as neuropathic-like symptoms. According to the cold pressor test, 60 (19.48%) participants presented impairment of conditioned pain modulation. The cutoff point of 12 of the painDETECT questionnaire showed values of diagnostic accuracy below 70% compared to the cold pressor test, except for a negative predictive value [76.98 95% Confidence Interval (CI) 71.72 to 81.51]. The cutoff point of 19 showed high specificity (78.63%, 95% CI 73.00 to 83.56), high negative predictive value (80.58%, 95%CI 78.16 to 82.79), and accuracy of 67.53% when compared to the cold pressor test.
Conclusion: PainDETECT questionnaire is useful for ruling out patients with musculoskeletal pain and impairment of conditioned pain modulation.
Implications: The PainDETECT questionnaire can be used as an initial screening strategy by healthcare professionals to screen for neuropathic-like symptoms in patients with musculoskeletal pain. Researchers should use instruments with high precision to assess the presence of signs and symptoms related to central sensitization and neuropathic-type symptoms to confirm the findings of the present study. Furthermore, the diagnostic accuracy of painDETECT is just one of the considerations when determining a screening tool for musculoskeletal pain. Therefore, additional aspects must be considered.
Keywords: Musculoskeletal Pain, Neuropathic Pain, Diffuse Noxious Inhibitory Control

Conflict of interest: The authors declare no conflict of interest.
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NEUROPATHIC-LIKE SYMPTOMS AND CENTRAL SENSITIZATION RELATED SIGNS AND SYMPTOMS NEGATIVELY AFFECT THE FUNCTIONAL PERFORMANCE OF PATIENTS WITH KNEE OSTEOARTHRITIS

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Background: Knee osteoarthritis is one of the main causes of disability in the elderly. Most of this population has movement restrictions and functional limitations (morning stiffness, reduced joint mobility, crackles and muscle atrophy) that compromise the performance of daily activities. Therefore, investigating aspects of the functionality of patients with knee osteoarthritis is relevant.
Objectives: This study aimed to compare the functional performance among participants with a neuropathic-like symptoms and central sensitization related signs and symptoms, and their knee osteoarthritis counterparts.
Methods: A cross-sectional observational study was conducted with 125 participants with knee osteoarthritis (94 females, mean age 63.1±7.4 years). Participants completed a self-reported questionnaire with personal and clinical features and musculoskeletal pain characteristics, including neuropathic-like symptoms (PainDETECT questionnaire), central sensitization related signs and symptoms (Central Sensitization Inventory, CSI), and conditioned pain modulation (Cold Pressor Test). Self-reported functional disability (Western Ontario and McMaster Universities Osteoarthritis Index, WOMAC) and functional mobility (Timed Up and Go, TUG) were compared among patients with neuropathic-like symptoms, central

sensitization related signs and symptoms and their knee osteoarthritis counterparts using the one-way analysis of variance (ANOVA).
Results: Thirty-three (26.4%) participants had neuropathic-like symptoms and central sensitization related signs and symptoms, eighteen (14.4%) had neuropathic-like symptoms, twenty-seven (21.6%) participants had central sensitization related signs and symptoms, and 47 (37.6%) had knee osteoarthritis with no neuropathic-like symptoms or central sensitization related signs and symptoms. A one-way ANOVA revealed greater functional limitation in the group with neuropathic-like symptoms and central sensitization related signs and symptoms (mean = 67.5±12.0) or neuropathic-like symptoms (mean = 56.7±17.5) than the group without these symptoms (mean = 32.0±20.7) with a statistical significance difference [$F(3, 121) = 29.434$, $p < 0.001$] in the WOMAC total score. The group with neuropathic-like symptoms and central sensitization related signs and symptoms (mean = 19.2±7.4) or neuropathic-like symptoms (mean = 16.3±6.3) had slower velocity than the group without these symptoms (mean = 11.6±3.5) with a statistical significance difference [$F(3,121) = 10.045$, $p < 0.001$] in the TUG test.
Conclusion: Participants with knee osteoarthritis and neuropathic-like symptoms or central sensitization pain phenotype have greater functional limitations than their counterparts.
Implications: Identifying distinct pain phenotypes in patients with knee osteoarthritis is endorsed to treat these patients adequately. The phenotype with neuropathic plus central pain component share similarities with patients with neuropathic-like symptoms, except for the conditioned pain modulation. Measuring the factors that affect the functionality in patients waiting for knee replacement may contribute to assertive decision-making. In this sense, the presence of neuropathic-like symptoms or central sensitization leads to a unfavored clinical outcomes in patients with knee osteoarthritis.
Keywords: Osteoarthritis, Neuropathic Pain, Central Sensitization

Conflict of interest: The authors declare no conflict of interest.
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LIFESTYLE HABITS, COMORBIDITIES AND KIDNEY FUNCTION IMPAIRMENT OF ADMISSION AND AFTER HOSPITAL DISCHARGE OF PATIENTS WITH COVID-19

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Background: The acute phase of Covid-19 in patients with a higher burden of disease and aggravating risk factors is characterized by the occurrence of a multisystemic inflammatory syndrome. Regarding the complications described the development of acute kidney injury has been associated with the occurrence of worse outcomes, higher morbimortality and complications in human functionality.
Objective: To assess the presence of lifestyle habits and the occurrence of changes in kidney function at admission and after the acute phase of Covid-19 in subjects that were hospitalized.
Method: Cross-sectional study, conducted from March to September 2021 in post-intensive care nucleus of the university hospital. That were included men and women aged 35-75 years with laboratory confirmation of Covid-19 and creatinine result. Lifestyle habits such as smoking, and alcoholism and comorbidities (at the hospital admission and discharge) were considered and evaluated. Data about the period of admission to the intensive care unit (ICU) and hospital in days were also included. The kidney function was evaluated according to serum creatinine levels (Crs) and estimate glomerular filtration rate (eGFR), that it is an estimate of the rate of clearance of Crs by the kidneys, it was calculated by the CKD/EPI equation in the patient's admission and after hospital discharge. The results were presented with relative and absolute frequencies and mean and standard deviation.
Results: 37 patients with an average age of 56.61 ±10.04 years were evaluated, 51.4% (n=19) were women and 29.7% (n=11) were smokers and alcoholics. The most common comorbidities in the hospital admission were a high blood pressure 70,2% (n=26), obesity 56.7% (n=21), dyslipidemias 29.7% (n=11), diabetes mellitus type 2 29.7% (n=11), coronary artery disease 10.8 % (n=4). After the Covid-19, this number increased of 2.7%, 13.7%, 5.4, 5.4% and 2.7%, respectively. The average period of days in the ICU and hospital was 16.94 ±14.29 and 31.48 ±20.97 respectively. Concerning the Crs level, 27% (n=10) of the sample presented elevation, which led to the need for hemodialysis.
Conclusion: Individuals with a history of smoking, alcohol consumption and multiple comorbidities evolved with kidney function change after the acute phase of Covid-19.
Implications: The kidney functionality of individuals with higher burden of disease may be compromised in the short and medium term after the acute phase of Covid-19.
Keywords: SARS-CoV-2 infection, Kidney function tests, Physical functional performance

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Acknowledgment: Not applicable.
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RANDOMIZED CONTROLLED TRIAL PROTOCOL: EFFECTIVENESS OF CRYOTHERAPY ON FUNCTION, PAIN, EDEMA AND RANGE OF MOTION IN ACUTE ANKLE STRAIN

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Background: Ankle sprain is a common condition in the general population, with a prevalence of 11.88%, and an incidence of seven sprains per 1000 exposures in athletes, resulting in a high frequency of chronic ankle instability. Therefore, effective therapies are increasingly sought after by clinicians. Cryotherapy is a low-cost and easy-to-use treatment option, being considered a potentially effective therapy in the acute inflammatory phase due to preclinical research findings, which suggest that cryotherapy can control inflammatory processes and promote local analgesia by decreasing nerve conduction velocity, which could lead to improved clinical outcomes. However, the current literature lacks evidence on clinical outcomes to support its use, raising the importance of new randomized controlled trials with low risk of bias and appropriate comparator groups.
Objectives: The aim of this not applied study protocol is to investigate the effectiveness of cryotherapy on function, pain intensity, swelling, and dorsiflexion range of motion in people with an acute episode of ankle sprain.
Methods: This is a two-arm prospective randomized controlled trial protocol, designed according to the SPIRIT guideline. People over 18 years old with a clinical diagnosis of grade I or II ankle sprain, and time of up to 72 hours from the injury episode, will be randomly allocated in the Ice Group, which consists of home medical prescription of immersion of the ankle in an ice bucket or, secondarily, ice packs, combined with elevation and non-steroidal anti-inflammatory drugs or to the No-Ice Group, which consists of the same medical prescription as the experimental group, but with no ice included. Our primary outcome is function, as measured by the Lower Extremity Functional Scale (LEFS). Our secondary endpoints are pain intensity (Numeric Pain Scale, 0-10), swelling (figure-of-eight method), and dorsiflexion range of motion (goniometry). Follow-ups will be performed at post-treatment (7 to 14 days) and 12 weeks after allocation. A sample size of 82 participants will be required for a minimum detection of the estimated 9-point effect size of the primary endpoint, with a power of 80%, a power of 5%, and an expected dropout rate of 20%. Statistical analysis will be performed following the intention-to-treat principle. Data normality will be tested by the Kolmogorov-Smirnov test. Parametric data will be analysed with mixed effects models for repeated measures with post-hoc Bonferroni analysis, and in case of non-parametric data, with generalized linear models of mixed effects. Effect sizes will be interpreted based on their minimal clinically important differences.
Results and implications: The results of this study may help to clarify the effects of cryotherapy in the treatment of acute ankle sprains and may guide clinicians in making better decisions.
Keywords: Cryotherapy, Ankle injuries, Randomized Controlled Trial

Conflict of interest: The authors declare no conflict of interest.

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EFFECTIVENESS OF CRYOTHERAPY ON FUNCTION, PAIN, EDEMA AND RANGE OF MOTION IN ACUTE ANKLE STRAIN: FROST RANDOMIZED CONTROLLED TRIAL PROTOCOL

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Background: Ankle sprain is a condition with a high incidence in the general population and athletes and can cause direct costs (expenses with medical appointments and medication) and indirect costs (absence from work and loss of productivity). Cryotherapy is often recommended for the management of this condition, however current evidence supporting cryotherapy is still uncertain. A systematic review is needed to inform clinicians and patients about the current quality of evidence for the effectiveness of cryotherapy after an episode of an acute ankle sprain.
Objectives: The aim of this systematic review was to investigate the effectiveness of cryotherapy on pain, edema, range of motion, function, and recurrence after acute ankle sprains.
Methods: This systematic review of randomized controlled trials was reported following the PRISMA checklist and some stages were conducted according to the Cochrane recommendations. Protocol was prospectively registered in PROSPERO (CRD42020166411) and Open Science Framework (https://osf.io/x6p23). Searches for randomized controlled trials evaluating the effectiveness of cryotherapy on pain, swelling, range of motion, function, and recurrence outcomes in people with acute ankle sprains were performed in six databases (MEDLINE, COCHRANE, EMBASE, AMED, PSYCINFO and PEDRO, without language or date restriction, until January 2021). Study selection, data extraction, and assessment of the methodological quality of included studies were conducted independently by two reviewers, with discrepancies resolved by a third reviewer. Estimates were presented as Difference of Means (MDs) with 95% confidence intervals (CIs). The quality of evidence was assessed using the GRADE approach.
Results: Two randomized controlled trials with a high risk of bias (methodological quality < 6 on the 0-10 PEDro scale) were included. There were no studies investigating the effectiveness of cryotherapy alone on our outcomes of interest. Both studies evaluated the additional effects of cryotherapy, comparing cryotherapy as an adjunct to another active intervention with the active intervention alone. Evidence with a high level of uncertainty shows that cryotherapy does not increase the effects of the other intervention for the outcomes edema (MD = 6.0; 95% CI: -0.5 to 12.5), pain (MD = -0.03; 95% CI: -0.34 to 0.28) and range of motion ($p > 0.05$).
Conclusion: The results of this study conclude that the current literature lacks evidence supporting the use of cryotherapy in the management of acute ankle sprains. There is an urgent call for higher quality RCTs to clarify the evidence on the effectiveness of cryotherapy in this condition.
Implications: Clinical guidelines should reassess recommendations regarding the use of cryotherapy in the management of acute ankle sprains. Clinicians should look for therapies with more robust scientific evidence as a first-line treatment for this condition.
Keywords: Cryotherapy, Ankle injuries, Randomized Controlled Trial

Conflict of interest: The authors declare no conflict of interest.
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NOT FROM THE START, BUT IN TIME! SHAPING CONSENSUS ON TERMINOLOGY AND RESEARCH PRIORITIES IN TELEHEALTH IN MUSCULOSKELETAL PAIN

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Background: Telehealth is an emerging field of study and has drawn attention to deliver health service to patients. Recently findings demonstrated heterogeneity in the telehealth terminology between stakeholders and a lack of agenda for research priorities in telehealth in musculoskeletal pain research.
Objectives: Consensus on standardization of terminology to be used in telehealth among all interested parties in musculoskeletal pain. Establish research priorities for the practice of musculoskeletal pain telehealth.
Methods: This is an international modified three-round e-Delphi survey. We invited researchers, clinicians, consumer representatives, industry partners/developers, healthcare managers, and policymakers identified via Expertscape, PubMed database, social media, and a snowball sampling strategy to recruit other potential participants. We sent a survey by email with a link to the Typeform® platform. We provided a list of potential terminologies and research priorities based on published studies with adjustments through the International Steering Committee and presented to panel members' participants. Firstly, panel members selected a range of telehealth terminologies for musculoskeletal pain research known. Subsequently, panel members were asked to rate the level of agreement of each terminology to be used in musculoskeletal pain research and the research priorities for musculoskeletal pain research field. A 5-point Likert scale was used to rate the level of agreement of each item and a priori cut-off points of at least 80% were used to establish consensus. Descriptive analysis of the results was performed with mean and standard deviations, and absolute and relative frequencies.
Results: From 694 potential participants invited, 160-panel members participated in the first round, 133 in the second round, and 134 in the third round. The rate of response from panel members for the second round was 83.1% and for the third round was 83.7%. The majority of the panel members were researchers 47.5%, clinicians 35.6% and consumers representatives 5.6%, mean age 41.6 (10.9), living in Brazil 19.4%, India 13.8%, and Australia 11.9%. Panel members reached a consensus on two terminologies and 14 research priorities from an initial list of 37 terminologies and 19 research priorities over the three rounds. Panel members reached a consensus for "digital health" and "telehealth" as standard terminologies. Panel members also reached a consensus for 14 research priorities considering featuring topics such as study designs, treatment effectiveness and implementation, education, health literacy and health equity for musculoskeletal pain research.
Conclusion: All stakeholders reached a consensus that the "digital health" and "telehealth" terminologies may be the most common and possibly standardized terminologies to be used for the moment. Stakeholders also identified a set of 14 telehealth musculoskeletal pain research priorities worldwide centered on community health needs.
Implications: Consensus on terminology will enable a clear communication about the use of communication and information technology in healthcare among people with musculoskeletal disorders. Establishing a set of research priorities based on the stakeholders needs allows a research agenda on key questions to be developed and achieved.
Keywords: Telehealth, Health priorities, Musculoskeletal pain

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PHYSIOTHERAPEUTIC CARE IN A CHILDCARE INSTITUTION: EXPERIENCE REPORT OF AN EXTENSION PROJECT

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Background: Childcare institutions are cited as places with a negative impact on motor development.
Objectives: To report the performance of the physiotherapist in a childcare institution in the city of Governador Valadares, Minas Gerais.
Methods: Experience report of an extension project that began in 2015, which carried out evaluation, monitoring and physiotherapeutic care for institutionalized infants and children. Data were collected through documents available at the institution and interviews with caregivers. Motor development was assessed using the Alberta Infant Motor Scale for infants or based on age-specific motor milestones. All institutionalized patients were evaluated by the project team and received individualized physiotherapeutic care once a week. The duration of follow-up varied according to the length of stay at the institution.
Results: 90 infants and children were evaluated. Physiotherapeutic care consisted of activities to stimulate development and the established objectives were centered on the complaint of each patient or caregiver, mainly aimed at improving the activity and participation components. Interventions were directly related to individual objectives, based on evidence-based practice. Physiotherapy sessions were carried out in a playful way, using children's music, allowing for greater interaction and social interaction. Most infants with motor delay evolved with adequate motor development after undergoing physiotherapeutic interventions. The team also shared

knowledge with the caregivers, providing guidance on child development and receiving information about the care to be provided, evidencing the exchange of knowledge and the empowerment of caregivers.
Conclusion: Physiotherapeutic care had a positive impact on the neuropsychomotor development of infants and children, highlighting the importance of early assessment and intervention and the insertion of professional physiotherapists in this practice scenario.
Implications: Emphasize the importance of evaluation, early intervention, and the insertion of professional physiotherapists in shelter institutions.
Keywords: Child Development, Institutionalization, Welcome Child

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ENVIRONMENTAL BARRIERS TO THE PARTICIPATION OF CHILDREN AND ADOLESCENTS WITH CEREBRAL PALSY IN THE COMMUNITY: A DESCRIPTIVE STUDY

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Background: Children and adolescents with cerebral palsy (CP) do not have the same opportunities as their peers without disabilities due to environmental barriers, therefore, the identification of community barriers is necessary to understand the aspects that may restrict participation in this context.
Objectives: To describe the barriers found in the environment of children and adolescents with CP that restrict participation in the community.
Methods: Descriptive study, carried out with data collected between August 2021 and January 2023, from Participa Brasil, a multicenter study with Brazilian children and adolescents with CP. Those responsible for minors were interviewed online or in person, using a questionnaire on environmental factors and the Participation and Environment Measure for Children and Youth (PEM-CY). In this study, only the PEM-CY data referring to the community were analyzed descriptively.
Results: The participants were 145 children and adolescents, with a mean age of 8.7 years (SD=2.7), of which 82 (56.6%) were boys. The GMFCS was classified as I (11%), II (29%), III (11%), IV (13%) and V (30%). The environment was considered a barrier to participation in the community for 48.4% of participants. Of these, 34.5% and 30.5% reported that "generally it makes more difficult" the child's participation in the community aspects such as the way in which the furniture, objects and physical structures of the environments were organized and the physical aspects necessary for the child performs to activities in the community, respectively. On the other hand, 54.5% and 53.8% answered that “generally it is not a problem” factors related to safety and the child's relationship with peers, in that order. Regarding the elements that were available or adequate, 10.3% and 8.2% stated that access to public transport and personal transport were “generally not” available to take children to community activities, respectively, and 26.9 % reported unavailability of programs and services offered in the community. Regarding information (about services and programs available for the child to participate in the community) 38% of parents mentioned that they “generally did not” have access.
As for equipment or materials that facilitate participation in the community, 48% stated that they were “generally not” available. In addition, it was observed that 8.3% and 15.9%, the minority of parents, answered that “generally not” had enough time and money, respectively, to help their child's participation in the community.
Conclusion: In the sample population of the study related aspects such as access to personal transport; public transportation; available time; money available; safety in the community and the child's relationship with peers were not considered barriers for most parents or guardians. On the other hand, related aspects such as the way furniture, objects and physical structures are organized; physical aspects of usual activities in the community; access to programs and services in the community; information about participation in the community and equipment and materials were the greatest environmental barriers found that restrict the participation of children and adolescents in the community.
Implications: The results provide information on where further interventions are needed to support community participation of children and adolescents with CP.
Keywords: Cerebral Palsy, Participation, Barriers

Conflict of interest: The authors declare no conflict of interest.
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ANALYSIS OF DYNAMIC BALANCE AND ANKLE MOBILITY IN FUNCTIONAL FITNESS PRACTITIONERS, ACCORDING TO GENDER

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Background: Functional Fitness Training (FF), known as Crosstraining, CrossFit®, or high-intensity functional training, comprises a physical conditioning modality characterized by a wide range of movements, including running, rowing, basic and olympic weight lifting, in addition to gymnastic movements. Because it is a relatively new modality, little is known about the specific functional attributes of FF practitioners.
Objectives: To analyze dynamic balance and ankle mobility of recreational FF practitioners according to gender.
Methods: This is a cross-sectional study and data collection was carried out at a university clinic in Campo Grande/MS. The sample was constituted in a non-probabilistic way, for convenience. Recreational FF practitioners of both genders, aged between 18 and 59 years old, and who had been training under professional supervision for at least one month were included. For dynamic balance analysis, the Lower Quarter Y-Balance Test (YBT-LQ) was used in the

anterior, posteromedial, and posterolateral reach directions. The averages of three attempts were recorded for each direction, for each lower limb. After normalizing each reach distance by the length of the lower limb, the composite score and the average between the right and left composite scores were obtained. To assess ankle mobility, the Weight-bearing lunge test was performed, recording the average angle of three attempts for each lower limb. To compare results according to sex, the Student's t-test or Mann-Whitney test was used, taking into account the distribution of data. Conclusions were taken at a significance level of 5%.
Results: The sample consisted of 75 participants, most female (69.3%; n=52), aged between 18 and 55 years (mean 32.3±7.0), and average time of experience in the modality of 39.8±25.6 months. The average YBT-LQ composite score between the right and left sides was 103.0±9.1 among men and 100.9±12.2 among women, and there was no statistically significant difference between groups ($p > 0.05$). Concerning ankle mobility, the average between the right and left sides of dorsiflexion range of motion in the Weight-bearing lunge test was 48.2±6.3 among men and 48.9±7.3 among women, with no statistically significant difference between groups ($p > 0.05$).
Conclusion: The performance in dynamic balance and ankle mobility of recreational FF practitioners was similar among adults of both genders.
Implications: These results can guide sports professionals in identifying normative values for balance and ankle mobility for practitioners of FF without injuries. Prospective studies are needed to determine whether these tests can predict FF-related injuries.
Keywords: Postural balance, Range of motion, Dorsiflexion

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: The study was approved by the Federal University of Mato Grosso do Sul (UFMS) Ethics Committee (protocol number 5,393,287, CAAE: 42946420000000021).

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BODY IMAGE AND SEXUAL DISSATISFACTION OF WOMEN ASSISTED IN A BASIC HEALTH UNIT

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Background: The female body suffers from standards imposed by society determined by the media or social networks, generating a continuous desire for bodies incompatible with reality. This desire can generate low self-esteem, causing women to feel dissatisfied with their own appearance. This is an important factor in sexual satisfaction, because women dissatisfied with their body and appearance may be ashamed to expose it to their partners, making sexual intercourse uncomfortable. It is necessary to understand the existing relationship between body and sexual dissatisfaction due to the scarcity of studies, assisting in the care of the health of the woman.
Objectives: The objective of this study was to verify the relationship between body and sexual satisfaction of women assisted in a Basic Health Unit (BHU).
Methods: Epidemiological, observational, cross-sectional study, conducted in a UBS in the city of Guarapuava - PR, with women enrolled in the Women's Comprehensive Health Program. Inclusion criteria were women aged 18 to 59 years who agreed to the Informed Consent Form. In September 2021, 1,811 women were enrolled in the Comprehensive Women's Health program, and the sample calculation with the StatCalc application of the Epi Info 7.2.4 program totaled 326 eligible women. Data collection was performed by applying a questionnaire during the period from October 02, 2021 to February 15, 2022, containing: sample characterization; lifestyle; women's health; sexual performance; body satisfaction. The dependent variable was sexual dissatisfaction, by the questionnaire Sexual Quotient - Female Version (QS-F), validated by Abdo, (2009). The independent variable was body image, collected by the Stunkard Silhouettes Scale, validated by Scagliusi, (2006). Data analysis was performed using the Statistical Package for the Social Sciences - IBM SPSS Statistic v.19 for Windows®. The association analysis between variables was performed using Pearson's Chi-square and ANOVA tests (statistical significance 5%, p-value<0.05). The reference category of the independent variable "body image" was the response "satisfied".
Results: Among the 326 women eligible for the study, there were 269 in this study, considering the losses and refusals. The mean age was 33.52 ± 10.15, mostly white (74.0%), with a partner (74.3%), working (63.8%), with children (79.0%), sexually satisfied (79.5%) and dissatisfied with their bodies (81.8%). Of these women, 20.6% were sexually dissatisfied. Statistical association was found between sexual dissatisfaction and mean age (<0.05), children (<0.001), menopause (<0.001), and body dissatisfaction (<0.05). There was a higher prevalence of sexual dissatisfaction in women dissatisfied with their bodies.
Conclusion: It was possible to conclude that there is a relationship between body image and sexual dissatisfaction in women who are assisted in a UBS.
Implications: These findings may help in the planning of actions to women's health in the Primary Care setting.
Keywords: Sexuality, Personal Satisfaction, Women's Health

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Universidade Estadual do Centro Oeste Research Ethics Committee, CAAE number 50951621.2.0000.0106

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IMPACT OF DYSMENORRHEA ON THE LEVEL OF SELF-PERCEPTION OF THE PELVIC FLOOR IN NULLIPAROUS YOUNG WOMEN

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Background: Dysmenorrhea, originated by a difficult menstrual flow, is a source of gynecological chronic pelvic pain in the lower abdomen or lumbar region, which can last the entire menstrual period and cause dysfunctions in the pelvic floor (PF). Despite the high prevalence of PF dysfunctions in the female population, women have limited knowledge about their perception and, consequently, about the health of this region.
Objectives: To evaluate the effect of dysmenorrhea on the level of self-perception of the pelvic floor in young nulliparous women.
Methods: A descriptive, observational, cross-sectional study was conducted with a convenience sample of nulliparous women. Women aged 18-30 years were selected, who had had their first sexual intercourse and never got pregnant. Participants were assessed for the same examiner using the socio-clinical questionnaire, visual analogue pain scale (VAS) and the pelvic floor self-perception

questionnaire (Domains: Gynecological consultation; Consciousness of the genito-urinary tract; Social activity; Habits of life; Self-perception; Sexual activity; Female anatomical knowledge). In the data analysis were calculated, according to the distribution of normality of the sample, the means and standard deviation of the variables and compared the groups with and without dysmenorrhea as a function of self-perceived PF with the t test for independent samples. Data were analyzed using the *Statistic Program for Social Science* (version 23) considering the significance level of 5%.
Results: Participated in this study 69 young adult nulliparous women with a mean age of 21.86 ± 3.16 years, mean schooling of 13.62 ±4.72 and 82.6% were attending higher education in health courses. The prevalence of dysmenorrhea was 65.21% (n=45) and most had regular menstrual flow. The level of pain of dysmenorrhea was low presenting average in VAS of 3.59 ±3.16 points. By the analysis of the domains and total score of the scale of self-perception of the PA it was verified that the majority of the sample presented a moderate level of perception. There was no statistically significant difference between the groups with and without dysmenorrhea in relation to the perception of PFM, however the group with dysmenorrhea had lower values. There was no correlation between the presence of dysmenorrhea and the domains of self-perception of PF.
Conclusion: Dysmenorrhea is prevalent among young nulliparous women and did not interfere with the perception of PF.
Implications: In scientific terms, it is worrisome to recognize that women who attend health courses have only a moderate level of perception of PF but also that although there was no statistical significance, if the sample was increased probably the symptom dysmenorrhea can interfere in functional terms of PF and alter their self-perception. In clinical terms, this study supports the importance of considering the perception of women in relation to their PF and can collaborate in therapeutic clinical practice.
Keywords: Women's health, Dysmenorrhea, Pelvic floor

Conflict of interest: The authors declare no conflict of interest.
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DORSIFLEXION RANGE OF MOTION (ROM) AND SHANK-FOREFOOT ALIGNMENT ARE ASSOCIATED WITH THE PERFORMANCE OF THE MODIFIED STAR EXCURSION BALANCE TEST

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Background: The modified Star Excursion Balance Test (mSEBT) is a valid, low-cost, and easily implemented screening tool in clinical practice recommended for assessing dynamic postural control in athletes. Previous studies evidenced that poorer performance on the mSEBT predicts an increased risk of injury in several sports. The performance of the mSEBT depends on the contribution of various body segments and constructs of physical function to reach maximum distance in the anterior, posteromedial, and posterolateral directions. Understanding the relationship between mSEBT performance, distal and proximal factors in the kinetic chain and other constructs of physical function in soccer athletes can contribute to a more assertive assessment in clinical practice, since soccer athletes with dynamic balance deficient are more likely to sustain a lower limb injury.
Objective: To verify if hip and foot/ankle musculoskeletal factors predicts the performance of the modified Star Excursion Balance Test (mSEBT) in male youth soccer athletes.
Methods: In this cross-sectional study, 108 athletes (18.04 ± 0.14 years, 72.86 ± 0.76 kg, 1.78 ± 0.7 m) in categories Under-17 and Under-20 from a professional soccer club in Brazil were assessed during the preseason assessment. The assessment included the following tests: shank-forefoot alignment (SFA), passive hip IR ROM, hamstring flexibility (HF), dorsiflexion range of motion (ROM), Single Leg Hamstring Bridge (SLHB), and the performance of the modified Star Excursion Balance Test (mSEBT). Multiple linear regression analysis was performed to identify if the foot/ankle musculoskeletal factors could explain the performance of the mSEBT.
Results: Regression analyses revealed that shank-forefoot alignment and ankle dorsiflexion ROM predicted the performance of the mSEBT ($P < 0.05$). In model 1, SFA explained 9% of the mSEBT performance ($F = 10.19$; $r = 0.3$; $r^2 = 0.9$; $p = 0.002$). The inclusion of the ankle dorsiflexion ROM in model 2 explained 16% of the total variance of the mSEBT ($F = 8.54$; $r = 0.4$; $r^2 = 0.16$; $p = 0.004$).
Conclusion: The ankle dorsiflexion ROM and shank-forefoot alignment explained 16% of the performance of the mSEBT in male youth soccer athletes. These results suggest that the ankle dorsiflexion ROM and shank-forefoot alignment contribute to test performance and the physiotherapist must assess these factors.
Implications: The results of this study suggest that considering the influence of distal musculoskeletal factors of the kinetic chain on dynamic postural control and the association of the ankle dorsiflexion ROM and the shank-forefoot alignment with the performance of the mSEBT in youth soccer athletes. Athletes with a lower performance in the test should be assessed to verify the shank-forefoot alignment and the ankle dorsiflexion ROM. In addition, the improvement of the ankle mobility can be considered a good intervention in the implementation of prevention programs.
Keywords: Postural control, Assessment, Kinetic chain

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: The study was approved by the Human Research Ethics Committee of the Federal University of Vale do Jequitinhonha e Mucurí, Brazil (CAAE - 42214920.4.0000.5108).

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ANALYSIS OF RELIABILITY, VALIDITY, RESPONSIVENESS AND MEASUREMENT ERROR OF THE COMPREHENSIVE MOTOR COORDINATION SCALE IN INDIVIDUALS WITH NEUROLOGICAL DISORDERS

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Background: The Comprehensive Motor Coordination Scale (CCS), developed with the purpose of analyzing the coordination of multiple body segments in individuals with neurological lesions, based on observational kinematics, assesses the quality of movement in patients with neurological dysfunctions.
Objectives: To perform the cross-cultural adaptation and measurement properties of CCS evaluation in patients with neurological disorders. Specifically, it is intended to evaluate the construct validity, inter-rater and intra-rater reliability, and responsiveness, of the Brazilian Portuguese version of the CCS in individuals with stroke.
Methods: The translation and comprehension analysis of the Portuguese-Brazil version was verified by specialists. The CCS will be applied to individuals with stroke, in conjunction with the graduation scale of this health condition, the Fugl-Meyer Scale, which grades the severity of this health condition. Each individual will perform 3 evaluations. Evaluators were trained by means of video for correct scale application and analysis. Two evaluators will apply the CCS to analyze inter-rater reliability in the first evaluation. Videos of all CCS tests will also be recorded for later scoring if two evaluators are not present. In the second evaluation, up to 5 days after the first, the CCS will be reapplied by one of the previous evaluators, allowing the analysis of intra-rater reliability. In the third application of the CCS, responsiveness of the scale will be evaluated after 10 physiotherapy sessions. Concurrent analysis will use the Box and Blocks Test and the 10-meter walking test (applied in the first and third evaluation).
Results: So far, data from 33 patients have been collected, with a mean age of 53.9 years (SD = 14.2), with the diagnosis of stroke, all chronic. Of this, 15 (45%) are female. Regarding education level, most patients had completed high school (27.3%). 57.6% of patients have predominantly left hemiparesis and 42.4%, right hemiparesis. Regarding the degree of stroke impairment, the mean Fugl Meyer score was 161.7 points (SD= 31.2).
Conclusion: We expect that the Brazilian version of the CCS will achieve good inter- and intra-evaluator reliability, strong positive correlation with patient severity and good responsiveness. The validation of video analysis should be confirmed.
Implications: The results of this study will provide information about the measurement properties of this new motor coordination assessment scale. Based on this information, implementation in clinical practice will be direct, allowing clinicians to use a valid tool, based on observational kinematics, both in-person and via video. The CCS will allow the assessment of motor coordination in patients with neurological disorders for clinical decision making and monitoring of recovery process after injury.
Keywords: Motor coordination, Evaluation, Motor performance

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Universidade Cidade de São Paulo (UNICID) and Associação de Assistência à Criança Deficiente (AACD) - CAAE:22875419.6.3001.0085

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IDENTIFICATION OF PRETERM INFANTS AT HIGH RISK OF CEREBRAL PALSY: PRELIMINARY DATA

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Background: The increase in the survival rate of preterm newborns is associated with a high risk of delay or changes in neuropsychomotor development, among them, cerebral palsy (CP), the most common childhood disability in the world. Although diagnosis has been traditionally made late, between the ages of 12 and 42 months, the use of tools that allow early detection of this health condition is recommended. The use of results from neuroimaging, from Hammersmith Infant Neurological Examination (HINE) and from general movements assessment (General Movements - GMs) in a combined way allows detecting infants at high risk of CP before 5 months of corrected age.
Objectives: Early identification of preterm infants between the ages of 2 and 4 months who are at high risk of CP.
Methods: This is a cross-sectional observational study carried out between February and December 2022. The sample consisted of preterm infants, born in the maternity of a university-hospital, with gestational age $<$ 34 weeks and/or weight $\leq$ 1500 grams, who were referred for follow-up at a preterm children's outpatient clinic in the university-hospital complex. The criteria considered as a high risk of CP were the presence of peri-intraventricular hemorrhage (PIVH) grades III and IV on cranial ultrasound (US); HINE total score $\leq$ 56; and abnormal classification (mildly abnormal or definitely abnormal) in GMs.
Results: In the present study, were assessed 26 preterm infants, 65.4% male, with a mean age of 99.88 days ($\pm$22.28), mean gestational age of 31.19 weeks ($\pm$2.45), and mean birth weight of 1491.92 grams ($\pm$455.99). Seven infants (26.9%) presented a HINE total score $\leq$ 56 points. Five infants (19.2%) had abnormal classification in GMs, 3 were classified as definitely abnormal and 2 as mildly abnormal. Twelve (46.2%) infants did not present PIVH, grades I and II were identified in 14 (53.8%) infants and none of them presented grades III and IV.
Conclusion: The use of GMs and HINE in a follow-up service of preterm infants provided early detection of infants at high risk of CP and referral for early intervention in a timely manner. However, US results should be interpreted with caution in this population, suggesting further investigation of this tool in future research.
Implications: Early detection of CP can facilitate diagnosis and enable referral for early intervention in the period of greater brain neuroplasticity, allowing better functional outcomes. In addition, it is important to emphasize that it can also contribute to coping and the family's mental health, reducing stress, anxiety and depression and increasing well-being.
Keywords: Prematurity, Early detection, Cerebral Palsy

Conflict of interest: The authors declare no conflict of interest.
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ACUTE EFFECT OF LASER PHOTOBIOMODULATION IN THE INTEGRATION PROCESS OF TOTAL SKIN GRAFT IN RATS

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Background: Skin grafting consists in a surgical procedure where a skin segment is transported from one region of the body to another, with applicability in different scenarios such as burns, neoplastic excisions and others. However, the procedure failure may occur due to a frequent complication, the tissue necrosis. Therefore, resources are sought to improve the skin graft integration, seeking to minimize this important complication. In this sense, photobiomodulation (PBM) has been investigated, considering its relevant effects on the healing process such as neovascularization stimulation, fibroblastic proliferation and modulation of inflammatory mediators. However, until now, there are no studies that have performed open bed irradiation, before skin replacement, to prepare it for receiving the tissue and aiming to be a PBM promising application.
Objectives: Evaluate and compare the effects of laser PBM, at red and infrared wavelengths, in the total skin graft integration process, in rats.
Methods: Eighteen Wistar rats were used, allocated in three groups: red laser (660nm), infrared laser (808nm), and control. In all groups, a 5x3 cm skin segment was removed, followed by panniculus carnosus muscle dissection. In the control group, the skin was replaced on the bed after a 180° rotation. In the laser groups, the bed first received irradiation with fluence of 25 J/cm^2 and irradiance of 2,500 mW/cm^2, in a total of 6 points, and then the skin was replaced in the same way. Euthanasia occurred on the 7th postoperative day, when photographic captures and skin tissue samples were collected for macroscopic analysis of tissue necrosis and descriptive histology, respectively. Statistical analysis was carried out using the Levene and Shapiro-Wilk tests, followed by Anova-Two-way test with Tukey post hoc and a significance level of 5%.
Results: The macroscopic analysis showed that the control, laser 660nm and laser 808nm groups had mean necrosis percentages of 26.30%, 16.01% and 37.29%, respectively. It was observed that the 660nm group reached a lower percentage, proving to be more effective than the 808nm laser group (p=0.0022), but there was no statistical difference when compared to the control. In the histological analysis, it was noted that the control and 660nm groups presented similar fibrosis formation and granulation tissue, with no presence of granulation tissue in the 808nm group. Furthermore, moderate inflammatory infiltrate was identified in the control group, weak in the 660nm group, and intense in the 808nm group.
Conclusion: The control and 660nm laser groups obtained similar results in macroscopic and microscopic analyses, while the 660nm laser showed superior performance compared to the 808nm laser group in skin graft integration.
Implications: This study presents an innovative character in that it performs irradiation of the open bed before skin grafts replacement, acting as a starting point for future research. More studies are needed for a better understanding of this PBM application, seeking to optimize the skin grafting procedure using a low-cost therapeutic resource with high applicability.
Keywords: Low-Level Light Therapy, Skin Transplantation, Tissue Repair

Conflict of interest: The authors declare no conflict of interest.
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EIGHT WEEKS OF FUNCTIONAL TRAINING IMPROVES FUNCTIONAL CAPACITY IN INDIVIDUALS WITH SPINAL CORD INJURY

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Background: Spinal cord injury (SCI) is a neurological condition that results from the interruption of the motor and sensory tracts of the spinal cord, causing deficits in functional abilities. Interventions that aim to improve the functional capacity of these individuals should be applied, and functional training (FT) is one possibility.
Objectives: To investigate the effect of eight weeks of FT on the functional capacity of individuals with SCI.
Methods: A prospective cohort study was carried out with 14 individuals with SCI who participated in a physical exercise program based on the FT model. The FT was performed once a week, lasting 60 minutes, and included strength, balance, and other exercises necessary for the development of functional capacities. The functional capacity was evaluated with the Motor Test Battery related to Functional Independence, composed of the tests: suspension for five seconds (0 to 3 points); transfer from wheelchair to another seat (0 or 1 point); biceps muscle endurance in 30 seconds (0 to 3 points, and number of repetitions); triceps muscle endurance in 30 seconds (0 to 3 points, and number of repetitions); lateral functional reach (0 to 2 points, and distance in cm), lower lateral (0 to 2 points), frontal (0 to 5 points; and distance in cm), and with trunk rotation (0 to 2 points); step transposition (0 to 3 points); and chair touch for 400 meters (0 to 3 points, and travel time). After the sum of the test scores, the individuals were classified as: "complete dependence" (0 to 6 points), "moderate autonomy" (7 to 13 points), "high autonomy" (14 to 20 points), and "total autonomy" (21 to 27 points). Assessments were conducted at T_0 (all participants were returning to FT activities after the flexibilization of social distancing measures due to COVID-19) and at T_1 (after eight weeks of FT). Results were presented as median and interquartile range (IQR), and comparisons between T_0 and T_1 were made with Wilcoxon's test [p-value and effect size (ES)] (α=5%; JASP 0.16.4).
Results: Participants were mostly male (n=11; 76%), aged 50 (IQR=13) years, and had SCI for 17 (IQR=22,3) years. At T_0, 21% (n=3) were classified as having "moderate autonomy", and 79% (n=11) as "total autonomy". After the eight weeks, all participants (100%; n=14) were classified as "full autonomy." A statistically significant increase was observed in overall battery score (T_0= 21.5; IQR=5 vs. T_1=23.5; IQR=4,25; p=0.045; ES = 0.550) and in lateral functional reach distance (T_0=23.0 IQR=10 *vs.* T_1=29.0; IQR=8,5; p=0.035; ES= 0.572) cm, and without statistical significance in muscle endurance of biceps (T_0= 23; IQR=10,8 *vs.* T_1=25; IQR=7,5; p=0.131; ES= 0.413) and triceps (T_0= 25; IQR=14,5 *vs.* T_1=28; IQR=10; p=0.054; ES= 0.523).
Conclusion: Eight weeks of FT were associated with improvements in functional capacity in individuals with SCI.

Implications: Although the study design used here i.e., prospective cohort, is not the most recommended for investigating the effects of interventions, FT seems to be an effective strategy for improving the functional capacity of individuals with SCI, and therefore can be incorporated into the rehabilitation of this group.
Keywords: Spinal cord injury, Functional training, Functional capacity

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CAN THE BEDDING BRIDGE TEST IN HOSPITALIZED PATIENTS PREDICT OUTCOMES AFTER 6 MONTHS OF FOLLOW-UP?

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Background: Early detection of functional limitations remains an important goal to prevent disability in individuals who have been hospitalized.
Objectives: To examine the association between versions of the bed bridge test (BBT), a new functional test to assess hospitalized patients, and post-hospitalization outcomes such as return to work, death, readmission and falls in individuals after six months of discharge.
Methods: This is a longitudinal, observational, prospective study, in which 92 hospitalized patients eligible for the study performed in random order o BBT: 5 repetitions (BBT5R) and 10 repetitions (BBT10R), 30 seconds (BBT30sec) and 60 seconds (BBT60sec). Sociodemographic data, diagnosis, comorbidities, and length of stay were recorded. Six months after hospital discharge, telephone contact was made and information was obtained on return to usual/work activities, rehospitalization, falls, functional independence, and the patient's vital status. Bivariate correlation analysis was performed. The independent variables were gender, age, comorbidities, length of stay, and performance on the BBT versions. The dependent variables were usual/work activities, rehospitalization, falls, functional independence, and death. Linear regression models were used to determine whether the BBT versions and sociodemographic variables predict return to usual/work activities, rehospitalization, falls, functional independence, and death.
Results: The participants (50.9±17.2 years old, 60% women) included in the study were composed of 66% with clinical condition and 34% with surgical condition. All versions of the BTT were associated with age and FSS comorbidity (rs=-0.50 to -0.20 and 0.28 to 0.43; $p<0.05$ for all). Only BBT30s (rs=0.28) and BBT60s (rs=0.37) were directly associated with returning to usual/work activities. There was no association between the BBT versions and the other dependent variables. Patients who resumed their usual/work activities performed better in BBT30s and BBT60s when compared to those who did not resume their activities (BBT30s = 19 ± 6 vs 15 ± 3.5 repetitions, $p = 0.007$; and BBT60s = 35 ± 11 vs 30 ± 5.4; p=0.015). Lower comorbidity score, female gender, and better performance on the BBT60s were independent predictors of higher return to work, explaining 40% of the variation.
Conclusion: This study demonstrated a modest association between return to work 6 months after discharge and better performance on the BBT60s during hospitalization, including lower scores for comorbidities and female sex. This relationship should be interpreted with caution and confirmed in future studies. The BBT60s is a simple, quick, and useful way to include hospitalized people in the follow-up.
Implications: This study allows us to present suggestions for future studies. Thus, it is suggested to continue investigating whether the BBT can be used as a predictor of other outcomes.
Keywords: Hospitalization, Patient outcome assessment, Mobility Limitation

Conflict of interest: The authors declare no conflict of interest.
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CLINIMETRIC PROPERTIES OF THE BRIDGE TEST IN BED FOR HOSPITALIZED PATIENTS

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Background: Functional performance tests are often not applicable to bedridden patients. The proposal to perform a physical test that requires little equipment, minimal training and simple execution in bed, expands the opportunity for evaluation and rehabilitation strategies for a variety of hospitalized patients, from bedridden to independent ones. Thus, the bed bridge test (BBT), and its time-limited and repetition-limited versions, may constitute a new functional test.
Objectives: To test the clinimetric properties of BBT reliability and validity: 5 repetitions (BBT 5R) and 10 repetitions (BBT 10R), 30 seconds (BBT 30sec) and 60 seconds (BBT 60sec), in hospitalized patients.
Methods: Were included 92 patients eligible for the study performed in random order the BBT5rep, BBT 10rep, BBT 30sec and BBT 60sec repeated on two days with an interval of 48 hours. Validity was tested by correlation analysis between the Functional Status Score (FSS) scale, the sit-to-stand test (BBT) and the Short-Physical Performance Battery test (SPPB). With data from day 2, reproducibility was analyzed with the intraclass correlation coefficient (ICC), standard error of measurement (SME) and minimum detectable difference (DMD). Effect floor and ceiling were also tested.
Results: Participants were 50.9±17.2 years old, 60% women and 66% with clinical condition. The test-retest ICC (95%) was good to excellent (BBT 5R CCI:0.89, 95%CI 0.84-0.93; BBT 10R CCI:0.92, 95%CI 0.88-0.95; BBT 30sec CCI:0.87, 95%CI0.80-0.91; and BBT 60sec CCI:0.88, 95%CI0.83-0.92). The concordances observed for the BBT 5R were EPM: 1.2 and DMD: 3.4; for BBT 10R EPM: 1.8 and DMD: 5.0, for TPL30sec EPM: 1.6 and DMD: 4.4; and for BBT 60sec EPM: 2.8 and DMD: 7.6. There were appropriate ceiling and floor effects for all versions. Content validity was observed by the weak association between the performance of the BBT versions and the

performance on the FSS (r s =-0.27 to -0.37 and 0.29 to 0.36, p<0.05 for all). Construct validity was observed by the moderate association between the four versions of the BBT and the SPPB (r s =-0.63 to -0.58 and 0.43 to 0.53, p<0.05, for all). Criterion validity was observed by the moderate association between the four versions of the BBT and the BBT (r s =-0.48 to -0.58 and 0.64, p<0.05) for all.
Conclusion: All versions of the BBT showed good reproducibility, measurement error and validity measurement, with no ceiling or floor effect in hospitalized patients. The BBT versions can be a good alternative for the functional assessment of bedridden patients.
Implications: This study allows us to present suggestions for future studies. Thus, it is suggested to continue investigating whether the BBT can be used as a predictor of other outcomes.
Keywords: Hospitalization, Patient Outcome Assessment, Mobility Limitation

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To God and all collaborators, for all the support and help, which many contributed to the realization of this work.
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TRANSLATION, TRANSCULTURAL ADAPTATION AND CONSTRUCTION VALIDITY OF THE PITTSBURGH FATIGABILITY SCALE INTO BRAZILIAN PORTUGUESE

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Background: Fatigue is a symptom associated with the weakening or depletion of an individual's physical and/or mental resources. The term fatigability comprises the subjective perception of fatigue in face of activities of specific intensity and duration. The Pittsburg Fatigability Scale (PFS), originally published in English, is the only validated scale to measure perceived fatigability in older adults. Considering the importance of specific assessment in the aging population for the prevention of conditions and for the rehabilitation, it is necessary to translate and adapt it cross-culturally to the specificities of the Brazilian context.
Objectives: To translate and cross-culturally adapt the Pittsburgh Fatigability Scale into Brazilian Portuguese to assess fatigability in the Brazilian older adult's population.
Methods: Based on Beaton et al. (2000) we carried out the translation and cross-cultural adaptation to generate the PFS version in Brazilian Portuguese (PFS-Brasil), following the steps: translation from the source language (English), comparison and synthesis of translated versions, blind back-translation, comparison of back-translations and assessment of instrument clarity by the expert committee. Older adults who met the inclusion and exclusion criteria were invited to participate voluntarily. Each participant provided demographic data, responded to the PFS-Brasil and reported their understanding, difficulty in responding and suggestions about each item on the scale. All assessments were performed in environments with noise, temperature, and lighting control to ensure privacy and comfort conditions for the proper performance of the tests. The R software was used to analyze the evidence of construct validity and instrument precision based on Confirmatory Factor Analysis (CFA), Cronbach's α, McDonald's ω and composite reliability.
Results: The Brazilian version of the PFS (PFS-Brasil) was developed. The pilot test referring to the last phase of the cross-cultural adaptation included the assessment of 103 participants. Confirmatory factor analyzes carried out point to the adequacy of bifactorial models for both subscales, with satisfactory and excellent internal consistency for the physical and mental subscales, respectively.
Conclusion: The present study demonstrated that the Brazilian version of the Pittsburgh Fatigability Scale has adequate construct validity for assessing perceived fatigability in older adults, both in its physical and mental subscales.
Implications: To have an assessment tool that is easy to use, brief, easy to understand and validated for our culture is essential for proper clinical assessment. The PFS-Brasil scale analyzes the degree of perceived physical and mental fatigability in the older adult and the scale will allow health professionals to assess health conditions in a comprehensive and precise way, defining rehabilitation procedures and its follow-up for the integral health care of the aging populations. To analyses other validation parameters are needed and are being performed as part of a second study.
Keywords: Validation Study, Patient-Reported Outcomes Measure, Functional Physical Performance

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EFFECTIVENESS OF CUPPING THERAPY ON MUSCLE PAIN IN RECREATIONAL RUNNERS: RANDOMIZED CLINICAL TRIAL

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Background: It is recommended that physical activity be a routine for people throughout their lives. The WHO recommends that adults get an average of 300 minutes of moderate activity or at least 75 minutes of high intensity activity per week. Among the sports, street running attracts more and more fans. It is an inclusive modality as it enables several people of different ages to practice it on a daily basis. It is associated with easy access, low cost, and low technical level. The incidence of running-related injuries is between 2.5 to 33 injuries per 1000 hours of running, and the variation occurs due to the type of runner, operationalization of the term injury, and duration of follow-up. To reduce the deleterious effects of muscle damage it is important for athletes to utilize recovery strategies to reduce pain, fatigue, prevent future injury, and enable a faster and more efficient return to training. It is believed that ventosaterapy is a recovery technique that performs drainage and increases blood circulation, facilitating the release of toxins that are associated with pain processes. The application time varies between 5 to 10 minutes with a negative pressure of 300 millibars being sufficient to generate changes in musculoskeletal pain. However, there are several modes of application. Therefore, the development of studies is important to prove the effectiveness of the technique.

Objectives: The primary endpoint evaluates the effectiveness of ventosaterapy on quadriceps muscle pain and the secondary endpoints investigate the effectiveness of the technique on muscle fatigue, performance, overall perceived effect after running.
Methods: This is a randomized controlled trial study, with a follow-up period of 72 hours, registered in the REBEC platform. The runners will be distributed in experimental or control group in a randomized manner. The experimental group will receive vacuum therapy in the quadriceps muscle belly after running and the control group will receive non-effective joint mobilization in the hip and knee joints. Both interventions will last 5 minutes. Allocation will be concealed using opaque, sealed, and numbered envelopes. The runner and the assessor will be blinded to the interventions. Intent-to-treat analysis will be used. Sample selection will be by convenience. Runners will be recruited after running street races in the city of Juiz de Fora and will be instructed not to perform vigorous physical activity 24 hours before and 72 hours after data collection. Inclusion criteria: running at least 6km, adult, running for at least 1 year, and having the habit of practicing running at least twice a week. The intervention or placebo will be performed on the leg that is most sore after running. If participants report the same level of pain in both legs or no pain at all, the side to be evaluated and treated will be randomly selected. The endpoints will be measured: Pain and fatigue (EVAN), muscle performance (unipodal vertical jump) and overall affect (perceived global affect scale).
Keywords: Runner, Recovery, Cupping

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Acknowledgment: Not applicable.
Ethics committee approval: Universidade Federal de Juiz de Fora - 55265621.2.0000.5147

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ANALYSIS OF SURVIVAL TIME AND FUNCTIONAL PROGRESSION IN PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS: A LONGITUDINAL STUDY

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Background: Amyotrophic lateral sclerosis (ALS) is a disease that causes progressive degeneration of neurons present in the spinal cord and cerebral cortex. It is a disease with a progressive course, with worsening disability and death 3 to 5 years after diagnosis. However, some patients seem to have a slower progression, while others maintain a rapid progression, which may influence the clinical course of the disease and accelerate death.
Objectives: To evaluate the survival time of patients with ALS, according to the progression of the disease in rapid or slow, and to compare the level of functionality between two evaluations.
Methods: A longitudinal case series study that followed patients with a confirmed diagnosis of ALS from August 2018 to February 2022. Data were collected from medical records of periodic evaluations, in which pulmonary function tests were performed and the ALS Functional Assessment Scale (ALSFRS-r) was applied. From the values obtained in the scale, the progression rate was calculated, where the patients were divided into slow or rapid progression and followed for 3.5 years for statistical analysis of survival, later performed by the Kaplan-Meyer test. The results of the scores of the first and second evaluation of each patient were compared using the paired t-test.
Results: 11 patients were followed, 7 with rapid progression (63%) and 4 slow (37%) with a mean age of 61.64 years and forced vital capacity (FVC): 62.2 (38.7-85.7)%pred. In the functionality evaluation, it was observed that there was a significant reduction ($p<0.01$) in the total scale score compared to the first evaluation. The survival percentage was 0%, where all patients died at the end of the study, but the median survival of the slow progression group from the first evaluation until the final outcome was 46 months, while the rapid progression group was 28 months, with no significant difference between the survival curves (HR = 0.42; CI 0.12 - 1.48).
Conclusion: The present study was able to demonstrate that after the second evaluation ALS patients may have significant losses of functionality by the decline of the ALSFRS-r functional score. Also, it can determine the evolution of the disease and assist in identifying the speed of progression of the pathology.
Implications: Regular use of the ALS functional assessment scale and calculation of the rate of progression in the outpatient clinical setting becomes essential to chart a better short- and long-term prognosis and follow-up of the disease.
Keywords: Prognosis, ALS, Survival

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USE OF SHAPING METHODS WITH FOCUS ON 1ST DORSAL INTEROSSEOUS' STRENGTHENING FOR TREATMENT OF INDIVIDUALS WITH RHIZARTHROSIS: CASE REPORT

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Background: Rhizoarthrosis is a chronic health condition characterized by progressive degeneration of the trapeziometacarpal joint. This implies a decreased range of motion, muscle weakness, and pain in the thumb base. Thus, the loss of structure and function of the hand can interfere with the characteristics of activities and participation of these subjects. These, however, can be minimized by the 1st dorsal interosseous muscle strengthening, an important trapeziometacarpal joint dynamic stabilizer. This strengthening is not usually included in physical rehabilitation, which also does not detail the exercises' load, progression, and number of repetitions.
Objectives: To reduce the impact of rhizoarthrosis on activities and the social participation of affected subjects, this study aimed to investigate the effect of an intervention with a shaping method focused on the 1st dorsal interosseous' strengthening.
Methods: Subjects with rizoarthrosis, diagnosed according to the Eaton- Littler -Burton criteria, were included. These were evaluated before, after 4 weeks, and at the end of treatment. For the evaluation of aspects of body structure and function, the pain was assessed using the Numerical Pain Scale, handgrip and pinch strength, and the Nine-Hole Peg Test (NHPT). Activity and participation were assessed using the Australian/Canadian Hand

Osteoarthritis Index (AUSCAN) and Canadian Occupational Performance Measure (COPM) questionnaires, in addition to some of the tasks of the Bilateral Upper Limb Function Test (TEBIM). Data was presented in mean and standard deviation. To verify the effects of the treatment, the delta of change for each variable was calculated and the percentage change was presented before and after evaluations.
Results: An increase of 4.35% in handgrip strength, 2.88% in pulp-pulp pinch strength and 14.93% in lateral pinch strength were observed. There was a reduction only in tripod pinch strength (10.35%). An improvement of 14.95% was also observed in the execution time of the NHPT and of up to 64.08% in the selected TEBIM activities. The AUSCAN and COPM questionnaires showed a 16.67% reduction in the difficulty of performing ADLs, a 37.5% reduction in stiffness and a 60.98% in pain, in addition to a 7.94% improvement in performance perception and 43.36% in satisfaction performing activities.
Conclusion: The data obtained so far suggest that the use of the shaping method in a treatment protocol focused on strengthening the 1st ID has effects on pain, function, dexterity, and grip and pinch strength in individuals with rizoarthrosis.
Implications: The results of the study may contribute to future physiotherapy studies regarding the intervention protocols for the population with thumb osteoarthritis. The existing clinical trials that focus on exercise-based rehabilitation for hand function in patients with OA at the base of the thumb describe this protocol with poor-quality information. In addition, this study provides preliminary results on the importance of including strengthening of the 1st dorsal interosseous bone in the rehabilitation of patients with rizoarthrosis.
Keywords: Hand joints, Osteoarthritis, Physical therapy

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FACTORS ASSOCIATED WITH THE PRESENCE OF PERSISTENT SYMPTOMS IN THE 6 MONTHS AFTER HOSPITALIZATION DUE TO COVID-19

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Background: At the peak of the pandemic, there was a great need for hospitalization of some of the infected according to the World Health Organization (WHO) about 20% of those infected require hospitalization. The hospitalized have impairment in functionality and cognitive aspects. When looking at COVID-19 survivors, there is an increasing number of patients with prolonged symptoms, a condition called Long COVID, defined as the persistence of symptoms for weeks or months after the resolution of the acute illness. The sum of these factors leads to a complex picture of the health of patients. It is extremely important to understand the recovery process of post-COVID individuals at a time when the world is dealing with the consequences left by the pandemic and many people struggle with the difficulty of returning to their daily activities and dealing with the associated financial losses.
Objectives: To identify and evaluate the factors associated with the presence or absence of persistent symptoms in the 6 months after discharge in individuals hospitalized for COVID-19.
Methods: This is a prospective cohort study of individuals who were hospitalized for COVID-19. This research is based on ethical principles, with appreciation by the Ethics Committee and with an Exceptional Free and Informed Consent Form from all participants. To assess the persistence of symptoms in the 6 months after discharge, an evaluation instrument was created based on previous articles. Pearson's chi-square test was used for the univariate association between the presence or absence of symptoms in general and the prevalence of the most frequent symptoms and possible risk factors.
Results: There was no association between the presence of persistent symptoms in general and possible risk factors. Analyzing the association between the presence of the most prevalent symptoms (joint pain, fatigue, dyspnea and myalgia) and possible risk factors (gender, severity, ICU stay, age$\geq$60 years and BMI), some significant associations were found. Joint pain and gender, where more than half of those who reported this symptom were women (57.1%; p=0.03). The age of individuals hospitalized with COVID-19 ($\geq$60 years) was statistically associated with the presence of Myalgia (p =0.003). Obesity was associated with the presence of the symptom fatigue (BMI$\geq$30; p=0.02). No association was found between severity and ICU stay with the analyzed symptoms.
Conclusion: As for risk factors, association analyzes indicated that: joint pain was more significant in females, myalgia was more pronounced in elderly individuals, and fatigue was closely related to obesity.
Implications: Essential information were found about the post-hospitalization recovery process due to COVID-19, demonstrating important particularities of each group, which contributes to offering specific health care to the demands of the region.
Keywords: COVID-19, Hospitalization, Symptoms

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: The Ethics Committee for Research with Human Beings (CEPSH-UFSC) approved the research under the Certificate of Presentation of Ethical Appreciation (CAAE) 33485120.4.0000.0121

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EFFECT OF BODY LATERALIZATION ON PULMONARY AERATION AND REGIONAL VENTILATION DISTRIBUTION IN HEALTHY INDIVIDUALS

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Background: Therapeutic body positioning has often been used in the hospital to improve oxygenation. Among the different positions, lateralization therapy is suggested to improve local pulmonary function by positioning the region of interest in the chest upwards to reduce the effect of gravity. However, there is still a gap in describing the physiological effects of lateralization between gravity-dependent and gravity-independent lung regions.

Objectives: To analyze the acute effects of body lateralization on aeration and distribution of regional pulmonary ventilation in healthy individuals breathing spontaneously.
Methods: A cohort of 10 healthy volunteers was evaluated in the supine position and a lateral decubitus position with a 30° inclination and the right hemithorax positioned upwards. The change in body position was automatically performed using the Multicare bed (Linet, Prague). Pulmonary ventilation and aeration were evaluated with the electrical impedance tomography (EIT) Enlight 1800 (Timpel, São Paulo). EIT images were segmented into four regions (ROIs: anterior right [AR], left [PL], posterior right [PR], and left [AL]). Data collection was performed at the Hospital das Clínicas of UFPE. The effect of body lateralization on regional pulmonary aeration was evaluated using the One-Way ANOVA test and Tukey's post hoc test. The interaction between regional ventilation distribution and body position was evaluated using the Two-Way ANOVA test. Differences were considered significant when the P value < 0.05.
Results: From supine to lateral decubitus position, pulmonary aeration in the AR and PR regions increased by an average of 197 mL and 130 mL, respectively. Only the AL region showed a systematic reduction in aeration, with an average of -155 mL compared to AR, PR, and PL ($p<0.05$). The distribution of ventilation in ROIs was modified with body position ($p = 0.004$ for interaction between ROIs and position). In the supine position, the AR, AL, PR, and PL regions received, respectively, an average of 23±8%, 20±12%, 23±5% and 32±17% of the inspired tidal volume ($p=0.27$ for ROI comparison). In lateral decubitus position, the distribution of ventilation in the AR, AL, PR, and PL regions was 12±5%, 25±11%, 13±8%, and 48±12%, respectively ($p<0.001$ for ROI comparison).
Conclusion: This study found that body lateralization increased lung aeration in non-gravity-dependent regions (AR and PR) and decreased it in the most gravity-dependent region (AL), suggesting that the change in gravitational axis may have altered the transpulmonary pressure. Lateralization also modulated the regional distribution of ventilation, decreasing it in non-gravity-dependent regions due to the decrease in lung compliance induced by increased aeration and greater diaphragmatic mobility in the dependent region.
Implications: The analysis of the results obtained in this case series has direct and comprehensive implications for the fields of technology and health. This therapy promoted favorable results in aeration and regional distribution of ventilation, thus contributing for fundamentals in theory and practice for assessment methods employed and the reproducibility in further new studies.
Keywords: Patient Positioning, Pulmonary Ventilation, Healthy Volunteers

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: UFPE (Propg), CAPES, CNPq e FACEPE (IBPG - 1976-4.08/22).
Ethics committee approval: Approved by the Ethics Committee on Research of the Brazilian Hospital Services Company (EBSERH) with protocol number: 5,980,254.

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PREDICTIVE FACTORS FOR THE LENGTH OF PHYSIOTHERAPY SESSION AT ADULT INTENSIVE CARE UNIT

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Background: Human resource allocation at intensive care unit (ICU) is essential for safety and quality in patient care. Although planning and organization are among the most effective instruments for health care management, human resource allocation varies across settings and is usually based on expert opinion, rather than on objective grounds. The identification of predictive factors for the length of physiotherapy session at the ICU could help with planning and management in health care services.
Objectives: To identify predictive factors for the length of physiotherapy session applied to adult ICU patients.
Methods: This was a longitudinal panel study. The primary outcome was the physiotherapy session length, which was collected at one time point, however, the same patient could have more than one session length collected in different observation time points. Data were collected from a 12-bed adult ICU at a teaching, secondary-care public hospital, where common practice relies on the physiotherapists' professional judgement to decide the time allotted and procedures used to manage each patient. All physiotherapy sessions applied to clinical and surgical patients were included. Sessions abruptly discontinued were excluded. A researcher followed one physiotherapist at a time during their entire work shift, measuring the duration of each physiotherapy session using a stopwatch. Physiotherapists signed informed consent form and provided information regarding their age and experience. Patient clinical and demographic data were collected from medical records. The study hypothesis was tested based on the patient and physiotherapist-related factors and the session length using a Multilevel Mixed Model. Sample size was estimated as 308 physiotherapy sessions (20 observations/predictor + 10%). The level of significance was $p=0.05$. Analysis was performed with software Jamovi 1.6.
Results: The study assessed 339 physiotherapy sessions during 79 periods of observation, involving 181 patients and 19 physiotherapists. Average (SD) session length was 31.5 (14.5) minutes. The median number of patients assisted per physiotherapist per 6-hour shift was 5 (IQR: 4 to 5). Physiotherapists' median age was 35 (26 to 39) years-old and ICU experience was 13.0 (0.4 to 16.0) years. Patients were mostly elder, post-surgery (38.7%), with current ICU length of stay of 5 (2 to 9) days. The Multilevel Mixed Model adjusted for outliers showed that current ICU length of stay [Estimate = 0.154 (0.027 to 0.281)], contraindication for out-of-bed mobilization [Estimate = -7.835 (-10.879 to -4.791)] and current use of sedatives, invasive mechanical ventilation, or vasoactive drugs [Estimate = 3.178 (0.223 to 6.133)] were associated with the length of physiotherapy session.
Conclusion: This was a single-center study; therefore, generalization should be made with caution. In our sample, factors related to the physiotherapist, such as age or experience, were not associated with session length. Contraindication for out-of-bed mobilization decreased session length while ICU length of stay and current use of sedatives, invasive mechanical ventilation or vasoactive drugs increased session length.
Implications: The identification of predictive factors for session length may help to estimate the number of patients that one physiotherapist is able to assist during the work shift, thus improving human resource allocation.
Keywords: Intensive care unit, Human resource, Workload

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: The study was approved by the Hospital Universitario Ethics Committee Board (approval number 2.134.696).

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PHYSICAL ACTIVITY, SLEEP QUALITY AND FACTORS ASSOCIATED WITH THE WORK ABILITY OF FRONT-LINE PHYSICAL THERAPISTS AGAINST COVID-19

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Background: The COVID-19 pandemic emphasized the importance of physiotherapy for the control and prevention of pulmonary and musculoskeletal complications, with emphasis on the specialty Respiratory Physiotherapy and Physiotherapy in Intensive Care. However, physical, and mental needs due to frontline work, as well as changes in lifestyle in the face of the pandemic, may have interfered with the ability of physiotherapists to work.
Objective: To associate the level of physical activity, sleep quality, and demographic and occupational factors with the work ability of physiotherapists on the front lines against COVID-19.
Methods: This is an analytical, cross-sectional, and quantitative study, Inclusion Criteria: physiotherapists registered with the Regional Council of Physiotherapy and Occupational Therapy and who signed an TCLE. Exclusion criteria: professionals not registered with CREFITO and who have not signed an TCLE. Brazilian physiotherapists working on the front line against COVID-19 responded to an online keyboard that grouped four instruments: a) demographic, occupational and lifestyle data; b) the International Physical Activity Questionnaire (IPAQ); c) the Pittsburgh Sleep Quality Index (PSQI); d) the Work Ability Index (WAI). Data were analyzed and presented in descriptive statistics (absolute and relative values, mean, standard deviation) and associations between ICT results and independent variables, conferring significance when $p \leq 0.05$. The statistical software R version 4.0.0 was used.
Results: Responses were obtained from all regions of Brazil. There was no association between work ability and physical activity level, but work ability was associated with poor sleep quality ($p < 0.001$) and WAI and PSQI values developed significantly negative ($r = -0.340$; $p < 0.001$). In the adjusted analysis, work ability was associated with female gender ($p = 0.018$) and with the clinical diagnosis of COVID-19 progress ($p < 0.001$).
Conclusion: In times of a pandemic, reduced work ability is associated with poor sleep quality, but not with the level of physical activity among physiotherapists on the frontline against COVID-19. The results warn about the potential impact of sleep on the work of professionals who deal with the health of the population, highlighting the need for strategies to support the occupational health of physiotherapists, especially in periods of public health crisis.
Implications: the work implies changes for the reorganization of health professionals' work systems to a format that enables assistance without worsening the levels of overload.
Keywords: Motor Activity, Sleep Wake Disorders, Occupational Health

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: approved under opinion 4.483.804/2020 of the Research Ethics Committee of the João de Barros Barreto University Hospital of the Federal University of Pará

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ASSESSMENT OF THE RISK OF FALLS OF ELDERLY PEOPLE ASSISTED IN THE GERIATRIC OUTPATIENT CLINIC OF A UNIVERSITY HOSPITAL IN BELÉM

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Background: Falls can be defined as the accidental displacement of the individual out of their balance axis towards the ground and represent a major problem for the geriatric population. They are naturally caused by the interaction of experimental factors with the decline in the individual's health and result in several consequences, such as: physical and social vulnerability, loss of independence and quality of life.
Objective: To assess the risk of falls, physical capacity and functional independence of elderly people treated at the geriatrics outpatient clinic of a university hospital in the city of Belém do Pará.
Methods: This is an exploratory descriptive cross-sectional study with quantitative characteristics, which was carried out at the Geriatrics Outpatient Clinic of the João de Barros Barreto University Hospital (HUJBB). The sample was selected voluntarily and included patients of both sexes aged between 60 and 80 years, who were in the waiting room of the HUJBB geriatrics outpatient sector and who agreed to participate in the research by signing the informed consent form. The instruments were applied: Mini Mental State Examination, Katz, Lawton & Brody Questionnaires and Short Physical Performance Battery (SPPB), which is a valid instrument for assessing the risk of falls in the elderly. Data were tabulated in a spreadsheet in Microsoft Excel 2013. Descriptive statistics were performed to detail the sample. To test hypotheses, the Fischer exact test was used and for correlations, Spearman's correlation was used.
Results: Ninety-two patients were included in the survey, with a mean age of 72.92 ($\pm$7.42). There was a strong association between risk of falls and cognitive response ($p = <0.001$) and risk of falls and instrumental capacity for daily living ($p = <0.001$). The frequency of smoking (OR: 1.58) and alcoholism (OR: 2.17) show an association with the occurrence of data falls by the SPPB ($p<0.001$). There was a modulated relationship between the history of falls and the SPPB results ($r = 0.571$), modulated in a modulated way between the Lawton & Brody and SPPB results ($r=0.571$), strongly modulated between physical activity with SPPB ($r = 0.809$) and very strong between the MMSE and SPPB results ($r = 0.978$).
Conclusion: elderly who are fallers had lower scores on the SPPB, and that they had a history of risk factors such as a history of alcoholism, smoking, low levels of physical activity and tended to have lower scores on the MMSE, Katz and L&B Index.
Implications: the work implies the need to promote the identification and approach of intrinsic and extrinsic risk factors related to the occurrence of falls.
Keywords: Risk Factors, Accidents due to falls, Elderly

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COMPARISON OF PELVIC FLOOR DISCOMFORT SYMPTOMS BETWEEN VAGINAL AND CESAREAN DELIVERY WOMEN

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Background: Pelvic floor disorders (PAD) include urinary, pelvic and anorectal symptoms. According to the type of delivery performed, the symptoms become more frequent. It is known that there is a greater risk of developing urinary incontinence and pelvic organ prolapse in women who had a vaginal childbirth when compared to women who had a cesarean section.
Objectives: The aim of the present study was to compare the symptoms of pelvic floor discomfort among puerperal women after vaginal and cesarean deliveries.
Methods: This is an observational study, conducted in two microregions in southern Santa Catarina, with 242 primiparous puerperal women aged 18 years or older. Women with up to 12 months of puerperium were selected. The instruments were applied through an online questionnaire. First, the participants were asked about sample characterization data. Afterwards, the Pelvic Floor Distress Inventory (PFDI-20) was used, which evaluates the symptoms of pelvic, anorectal, and urinary discomfort, with higher scores demonstrating more symptoms of PAD. Data were analyzed descriptively and inferentially, with a significance level of 5%.
Results: Analysis in progress.
Conclusion: Postpartum women with normal delivery are more affected by urinary symptoms when compared to postpartum women with cesarean section. It is necessary to conduct studies that seek to create strategies to minimize this type of symptom after vaginal childbirth.
Implications: The lack of national studies on this theme is highlighted, evidencing the importance of its realization.
Keywords: Pelvic floor disorders, vaginal delivery, cesarean delivery

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: UFSC:13189919.0.0000.0121.

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ANALYSIS OF MOTOR FUNCTION MEASUREMENT, MUSCLE STRENGTH, AND FATIGUE LEVEL IN INDIVIDUALS WITH MUSCULAR DYSTROPHIES

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Background: Muscular dystrophies (DMs) represent a complex, varied, and important subset of neuromuscular disorders, caused by genetic alterations that result in skeletal muscle degeneration and progressive muscle weakness, generating changes in motor function and directly impacting functionality. Fatigue is a common symptom that prevents adequate muscle contraction and interferes with daily activities, reducing the quality of life.
Objective: To assess motor function, muscle strength, and fatigue in individuals with DM.
Methdos: Quantitative and cross-sectional study, carried out in a state rehabilitation center in Goiânia, Goiás, Brazil. and data collection took place between March and July 2022. The research consisted of individuals with a confirmed diagnosis of muscular dystrophy, over 18 years and who attended the neuromuscular diseases clinic of the institution. Motor function was assessed using the Motor Function Measurement Scale (MFM-32), muscle strength using the Medical Research Council (MRC), and fatigue using the Fatigue Severity Scale (FSS). All evaluations were performed by the same, duly trained evaluator. The parametricity of the data was verified using a normalized Q-Q plot and a histogram of standardized residues. Comparison between groups was tested by applying the Analysis of Variance (ANOVA) and Pearson's Chi-square tests. The significance level adopted was $p < 0.05$.
Results: The sample consisted of 66 participants, with a mean age of 35.7($\pm$13) years, most of them male 39(59.1%). The sample was divided into three groups according to the presented diagnosis. The group with limb girdle muscular dystrophy (LGMD) was composed of 30(45.5%) individuals, Duchenne Muscular Dystrophy (DMD) 17 (25.8%), and Myotonic Dystrophy type 1 (DM1) with 19(28.8%). %). The mean found in the MFM-32 score was 54.9 $\pm$ 29.5, with the DMD having the lowest value of 23.5$\pm$12.6 with a statistical difference between groups ($p<0.001$). The MRC presented a total average of 32.4$\pm$17.4 with the DMD presenting lower values of 12.8$\pm$5.8 with the statistical difference ($p<0.001$). The general FSS presented a mean of 36.0$\pm$13.3, predominantly classified as moderate in DM1 11 (57.9), without fatigue in LGMD 11(36.7) and DMD and 6(35.3) with no difference between the groups.
Conclusion: Motor function and muscle strength were reduced in individuals with DM, and DMD showed lower values concerning LGMD and DM1, showing greater severity of the disease. Fatigue was not reported in most individuals with LGMD and DMD, however, it was moderate in DM1. Implications: This article is innovative in describing the clinical aspects of a rare disease, and the sample size of this study proved to be satisfactory, allowing a more robust and detailed interpretation of the functionality of this population, and enabling better rehabilitation strategies.
Keywords: Muscular Dystrophies, Respiratory Function Tests, Muscle Weakness

Conflicts of interest: The authors declare no conflicts of interest.
Acknowledgment: Not applicable
Ethics committee approval: The research was approved by the Leide das Neves Ferreira Research Ethics Committee (CAAE: 53491221.6.0000.5082).

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DYNAMIC AND STATIC INSPIRATORY MUSCLE STRENGTH OF CHRONIC QUADRIPLEGIC PATIENTS UNDERGOING PULMONARY REHABILITATION: A CONTROLLED CLINICAL TRIAL

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Background: Individuals with spinal cord injury (SCI) have frequent pulmonary complications, with impaired respiratory muscle strength and lung function.
Objective: To analyze the behavior of static and dynamic measures of inspiratory muscle strength in individuals with SCI after inspiratory muscle training (IMT).
Methods: Clinical, randomized, controlled trial, carried out at the Centro Estadual de Reabilitação e Readaptação Dr. Henrique Santillo (CRER), with individuals diagnosed with complete motor SCI, classified as having chronic quadriplegia, ASIA Impairment Scale (AIS) A or B, hospitalized for rehabilitation, from March 2020 to June 2021. Maximal inspiratory muscle pressure (MIP) was evaluated using manovacuometry and dynamic measurement of inspiratory muscle strength (S-Index) using the PowerBreathe K5. The subjects were randomized into blocks of six patients into three groups, two intervention groups, as follows: (Group I) care with conventional physiotherapy associated with low-pressure IMT (30% S-Index), (Group II) care with conventional physiotherapy associated with a specific IMT with high pressure (50% S-Index), and a control group (Group III) that received care with conventional physiotherapy. IMT was performed with the PowerBreathe K5 device, with load adjustment performed weekly and 10% increments based on the S-Index. The protocol consisted of 4 weeks of intervention, with training 5 times a week, 2 times a day. Parametric data were presented with mean and standard deviation and non-parametric data with median and 25th and 75th percentiles. Factorial and Friedman ANOVA were used for comparison between groups, and a significant value of $p \leq 0.05$ was adopted.
Results: Partial data from 6 individuals with a mean age of 33±11.3 years, all male, mean height 1.75±0.08cm, Body Mass Index 73.3 ±19.9 kg/m2, with an average time of injury 28±17.4 months, 2(33.3%) with the neurological level of injury in C4, 2(33.3%) C5, 2 (33.3%) C6, 5 (83.3 %) classified as AIS A, 3 (50%) declared to be former smokers. Comparing MIP before and after IMT, we observed an increase in all groups, with predominance in group I (-60±14 *vs* -105±21cmH2O, p=0.18) followed by GII and GIII (-45±7 *vs* -57±3cmH2O, p=0.18; -80±0 *vs* -92±3cmH2O p=0.18, respectively) with no significant difference. The S-Index showed an increase in GI (79.5±38.39 *vs* - 112±38cmH2O, p=0.14) and GIII (107±57 *vs* - 180±149cmH2O, p=0.49) and a reduction in GII (193±55 *vs* - 166±159cmH2O, p=0.49) with no difference between groups.
Conclusion: The IMT seems to promote an increase in the static and dynamic inspiratory muscle forces, with a predominance in the training group with lower loads, however, we did not observe any difference in the inspiratory muscle forces with different loads in the IMT for the studied population.
Implications: The incipient data are still not enough.
Keywords: Spinal cord injury, Functionality, Inspiratory muscle training

Conflicts of interest: The authors declare no conflicts of interest.
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Ethics committee approval: Ethics committee in research Leide das Neves Ferreira. CAAE: :06744919.8.0000.5082.

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EVIDENCE OF MUSIC THERAPY IN THE MANAGEMENT OF INDIVIDUALS IN THE TERMINAL STAGE: A SYSTEMATIC REVIEW

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Background: Music therapy (MT) for terminally ill patients (PT) has been used as a complementary and multidisciplinary palliative treatment, and numerous repercussions may be present in the management of patient treatment. TM aims to relieve physical and emotional symptoms, including reducing pain and improving quality of life. In addition, it can bring support and help in communicating with family members in coping with grief. Being of great importance to individuals to be more comfortable at the end of life.
Objectives: to analyze the evidence in the literature of studies related to the use of music therapy in the management of terminally ill patients.
Objectives: to analyze the evidence in the literature of studies related to the use of music therapy in the management of terminally ill patients.
Methods: A systematic review was carried out under the PRISMA guidelines, through the databases: PubMed, Cinahl and Cochrane Library CENTRAL and the descriptors found in the Medical Subject Headings (MeSH) and, in the Health Sciences Descriptors (DeCS). Studies containing the descriptors “Palliative care”, “Music Therapy” and “Terminal patients” and their cognates were selected, with no restriction regarding languages.
Results: A total of 5,836 studies were identified, 12 of which were selected for the review, and only those that described the effects of TM on PT were recruited. In 6 studies it was demonstrated that TM was able to reduce pain, in 5 articles it was identified an increase in well-being. 5 studies identified improvement in QoL through the application of a questionnaire. One study used spirituality as a relevant factor in the effectiveness of TM. Four publications analyzed the effect of TM on pre- and post-intervention discomfort, showing a reduction in discomfort after the intervention.
Conclusion: TM proves to be an intervention capable of generating positive responses that correspond to an increase in QoL, with effects on the clinical, physiological and psychological outcomes of individuals in the terminal phase.
Implications: The use of TM in PT is a cheap and accessible approach, which can bring many benefits to individuals who are in the final stages of life, bringing greater comfort and general well-being.
Keywords: Palliative care, Music therapy, Terminal Patients

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Ethics committee approval: Not applicable.

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WHAT DO PATIENTS WITH CHRONIC SHOULDER PAIN EXPECT FROM PHYSIOTHERAPY IN THE BRAZILIAN PUBLIC SECTOR? A QUALITATIVE STUDY

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Background: High recovery expectations of patients with musculoskeletal pain have already been associated with lower levels of anxiety and pain-related disability. This fact demonstrates that what individuals expect from treatment can influence the course of rehabilitation. However, there are still no studies with patients with chronic shoulder pain that explore expectations regarding physiotherapy offered within the Brazilian public sector.

Objectives: Understanding what patients with chronic shoulder pain expect from physiotherapy offered by the Brazilian public sector.

Methods: 30 individuals with chronic shoulder pain over 18 years old, with pain of traumatic and non-traumatic origin for at least three months who were waiting for physiotherapeutic treatment were selected. Semi-structured interviews were conducted, which were recorded, transcribed, and submitted to thematic analysis and inductive coding.

Results: Two themes were identified: 1) Positive beliefs and expectations with physiotherapy, and 2) Disbelief with physiotherapy intervention. For each theme, a category emerged, which were, respectively: Waiting for the improvement of the physical condition and the uncertainty of the success of the treatment. In topic 1, 16 patients reported that they expected physiotherapy to relieve pain; 7 individuals expected movement to be improved; 2 that physiotherapy would provide the cure, and finally, 1 hoped that the inflammation, which was the cause of the pain, would be improved: *"What it get better, right? I hope to relieve the pain" (Patient 26); "Ah, help me to return with the normal movement of my arm, that's what I hope" (Patient 18); "Oh, it gets better. Cure! (Laughter). I want the cure! (...)" (Patient 10) "Expectation of improvement, a lot, cure I know that it can be possible, but it improves, it disinflames the arm because it is inflamed (...)" (Patient 9)*. In this theme, the codes that emerged were pain, movement, healing and disinflammation. In topic 2, two patients reported not knowing what to expect from physiotherapy: *"Look, I can't say what physiotherapy can help me because I don't know what it's going to do, I don't know" (Patient 25)*; and 2 patients believed that only surgery could help the condition: *"I wanted to have the surgery and it would be resolved soon (...) if I had done it a month after the trauma I would certainly be 100% today" (Patient 2)*. In this theme, the codes that emerged were uncertainty, time for improvement and surgery.

Conclusion: Most patients had positive expectations in relation to physiotherapeutic treatment in the Brazilian public sector. However, individuals who reported disbelief demonstrated not knowing what to expect from the treatment or that they believed that surgery would be the best way.

Implications: Reinforcing or elucidating the possible results that physiotherapy can deliver to patients in the Brazilian public sector with chronic shoulder pain, may favor the creation of high recovery expectations and consequently positively impact physiotherapy rehabilitation.

Keywords: Beliefs, Pain in the shoulder, Qualitative research

Conflict of interest: The authors declare no conflict of interest.

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FOOD CONSUMPTION AND MULTIMORBIDITY PATTERNS IN BRAZILIAN OLDER ADULTS: ANALYSIS OF NATIONAL HEALTH SURVEY 2019

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Background: Food consumption influences aging since eating large amounts of foods rich in fats and sugars, as well as low consumption of fruits and vegetables, are factors associated with obesity and multimorbidity. In the older adults, chronic diseases are increasingly being analyzed in terms of involvement, considering their similarities in symptomatological/clinical characteristics, and evaluating their possible health complications. So far, the direction and magnitude of the existing association between food consumption and multimorbidity patterns is unknown, which demonstrates the relevance of this analysis to support the promotion of healthier eating habits by the older adult's population.

Objectives: To verify the association between food consumption and multimorbidity patterns in the older adults.

Methods: Cross-sectional study, with data from 22,728 Brazilian community-dwelling older adults (≥60 years old) participating in the National Health Survey 2019. Food consumption was analyzed by individual food items (fruits and vegetables, beans, red meat, chicken, fish, sweets, milk) and the substitution of meals for quick snacks (SMQS) and categorized in times/week: never or less than one (reference category); one; 2-3; every day. Salt intake was categorized as very low/low, adequate, or very high/high. Outcomes were multimorbidity patterns, assessed by self-reporting the coexistence of two or more chronic diseases with similar clinical characteristics: cardiopulmonary, musculoskeletal, and vascular-metabolic. Logistic regression analyzes were performed, adjusted for gender, age group, years of study, body mass index and level of leisure-time physical activity.

Results: The older adults who consumed fish once (OR=0.68; CI95%=0.54-0.87), 2-3 (OR=0.62; CI95%=0.46-0.83) and every day of the week (OR=0.61; CI95%=0.38-0.99) were less likely to be affected by the cardiopulmonary pattern, while those who consumed sweets every day (OR=1.34; CI95%=1.02-1.76) and very high/high amount of salt (OR=1.52; 95%CI=1.06-2.17) were more likely to be affected by this pattern. Consuming chicken 2-3 (OR=1.59; CI95%=1.02-2.49) and SMQS once/week (OR=3.33; CI95%=1.15-9.62) increased the odds of involvement by the musculoskeletal pattern. Consuming red meat 2-3 (OR=0.82; CI95%=0.74-0.90) and every day (OR=0.76; CI95%=0.68-0.84) decreased the chances of involvement by the

vascular-metabolic pattern; in the same way as eating sweets one (OR=0.89; CI95%=0.80-0.99), 2-3 (OR=0.77; CI95%=0.71-0.85) and all days (OR=0.76; CI95%=0.69-0.84), and ingest adequate (OR=0.69; CI95%=0.65-0.74) and very high/high amount of salt (OR=0.83; CI95%=0.72-0.95). However, consuming chicken (OR=1.21; CI95=1.07-1.36) and milk every day (OR=1.10; CI95%=1.02-1.18) increased the chances of being affected by the vascular-metabolic pattern.
Conclusion: There was a negative association between fish consumption and cardiopulmonary pattern, while sweets and salt were positively associated. Consuming chicken and SMQS were positively associated with musculoskeletal pattern. Finally, there was a positive association between the consumption of chicken and milk with a vascular-metabolic pattern, while sweets, salt and red meat were negatively associated.
Implications: This study will help health workers to prevent and adopt a more effective integrative approach, considering food consumption as a potential factor to reduce the chances of developing multimorbidity patterns in older adults.
Keywords: Aged, Food Behavior, Multimorbidity

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
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FACTORS ASSOCIATED WITH TELEVISION TIME IN BRAZILIAN COMMUNITY-DWELLING OLDER ADULTS: ANALYSIS OF NATIONAL HEALTH SURVEY 2019

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Background: Watching television corresponds to the most frequent sedentary behavior in older adults and which is associated with greater health risks, including frailty and all-cause mortality. Thus, it is important to develop studies that assess the factors that are associated with this behavior, so that the government, together with health professionals, has adequate knowledge to support the best recommendations for the older population, which can guide change or, at least, a decrease in the daily time spent on this behavior.
Objectives: Identify the factors associated with the time spent watching television in the older adults.
Methods: Cross-sectional study, with data from 22,728 Brazilian community-dwelling older adults ($\geq$60 years old) participating in the National Health Survey 2019. The outcome of the study consisted of self-reporting the time spent watching television, dichotomized into $<$3h/day and $\geq$3h/day. The independent variables were sociodemographic and behavioral characteristics, health conditions and functional capacity. To investigate the various associated factors, multivariate logistic regression analyzes with robust variance were performed using a hierarchical analytical model.
Results: The proportion of older adults sampled who spent $\geq$ 3h/day watching television was 28.8% (95%CI: 28.2; 29.5). The following factors were positively associated with longer hours watching television: (1) sociodemographic (female gender [OR: 1.31; 95%CI: 1.21; 1.41]; age between 70 and 79 years [OR: 1.20; CI95: 1.11; 1.30] and $\geq$80 years [OR: 1.25; CI95%: 1.12; 1.39]; years of study over 12 [OR: 1.24; CI95%: 1 .10; 1.42] and between 9 and 11 [OR: 1.24. 95%CI: 1.08; 1.43]; divorced [OR: 1.33; 95%CI: 1.23; 1.44] and widowed [OR: 1.35; 95%CI: 1.24; 1.48]), (2) behavioral (smoker [OR: 1.55; 95%CI: 1.40; 1.72]; insufficiently active in the leisure [OR: 1.12; 95%CI: 1.02; 1.22]), (3) health conditions (with a chronic disease [OR: 1.35; 1.13; 95%CI: 1.03; 1.25] and more than two [OR: 1.46; 95%CI: 1.33; 1.60]; overweight [OR: 1.28; 95%CI: 1.16; 1.42]) and (4) functional capacity (mild functional disability [OR: 1.19; 95%CI: 1.09; 1.30] and moderate/severe [OR: 1.38; 95%CI: 1.25; 1.52]) . On the other hand, per capita household income $\geq$1 and $<$2 (OR: 0.82; 95%CI: 0.74; 0.90) and $<$1 minimum wage (OR: 0.76; 95%CI: 0.69; 0.83), and without schooling (OR: 0.62; 95%CI: 0.53; 0.71) were negatively associated with longer hours watching television.
Conclusion: Therefore, it is important that these factors be considered in the multidimensional assessment of the older adults, so that intervention measures are effective, such as guiding greater social interactions and inserting healthier habits into daily life, such as the practice of physical activity and healthy eating.
Implications: The results reinforce the evaluation of these characteristics in clinical practice to track and identify the factors associated with greater chances of older people spending extended time watching television, which, in turn, can prevent several negative outcomes for the health of the older person.
Keywords: Aged, Sedentary behavior, Associated factor

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BIOMECHANICS OF GAIT IN WOMEN WITH KNEE OSTEOARTHRITIS

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Background: Osteoarthritis is a chronic, progressive disease that affects more than 250 million people in the world, mainly women after menopause. Among all joints, the knee is the most commonly affected. Knee osteoarthritis (KOA) occupies tenth place in the world ranking of diseases that cause global disability. Walking is the most frequently performed daily task. Neuromuscular deficits characteristic of KOA, such as decreased quadriceps strength and balance, can lead to changes in the movement pattern during gait that contribute to greater energy expenditure and, consequently, limitation of the intensity and duration of this task.
Objectives: The study aimed to compare the kinematic variables of gait in women with and without KOA.
Methods: The study included 71 individuals divided into groups with Knee Osteoarthritis (KOAG, n=39; 66.8$\pm$7.7 years) and a control group (CG, n=32; 64.9$\pm$7.1 years). The study was approved by the local ethics committee and all participants signed an informed consent form. For gait evaluation, a 14-meter-long and 1-meter-wide walkway was used.

The volunteers were verbally instructed to walk on the walkway at the same speed they were used to. Altogether, five attempts

were made to evaluate gait. Kinematic data were obtained by Foot Switches (Noraxon®) pressure sensors, positioned bilaterally on the calcaneus and at the base of the hallux. The gait variables collected were support time; swing time; stride time; double support time and gait speed. For statistical analysis, the Multivariate Analysis of Covariance test (MANCOVA) was applied, using the co-variable gait speed. A significance level of $p<0.05$ was adopted.
Results: MANCOVA showed differences ($p < 0.001$) between the group with KOA (KOAG) and the control group (CG). In the KOAG group, the time of support, striding and double support was longer, representing, respectively, 17%, 8% and 33% higher in relation to the CG. The study showed that the KOAG had a shorter swing time and an 11% reduction in gait speed.
Conclusion: Women with KOA had an average speed 16% lower than the safe gait speed thresholds indicated in the literature (between 1.2 and 1.4 ms^{-1}) and alterations in the kinematic gait parameters, which can be interpreted as a strategy for reducing pain and joint overload on the knee while performing the task.
Implications: The study shows that women with KOA present a decrease in gait speed and alterations in the movement pattern that can negatively contribute to the level of functional mobility. Rehabilitation strategies for this population should include, in addition to resistance exercises, sensorimotor exercises to improve the gait pattern of this population.
Keywords: Functionality, Walking, Speed

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Work approved by the Ethics Committee of Universidade Estadual Paulista, Campus de Marília, opinion number 1.503.496/2015.

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FUNCTIONING OF WOMEN IN THE POSTOPERATIVE PERIOD AFTER BREAST CANCER SURGERY

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Background: Functioning results from complex interactions between different domains of life, such as "health conditions", "body function and structure", "activity and participation", and "personal and environmental factors". Women undergoing surgery for breast cancer are expected to suffer from some degree of functioning impairment, whether due to alterations in structural components of the ipsilateral upper limb or psychological and social harm. In this context, understanding which domains of functioning are most affected and to what extent these changes can impact the lives of these patients is crucial for designing public health policies and effective rehabilitation protocols particularly tailored to this population.
Objectives: To assess the functioning/disability of women who underwent surgery as a treatment for breast cancer using the World Health Organization Disability Assessment Schedule (WHODAS 2.0), which is an instrument developed by the World Health Organization that assesses functioning in six domains: cognition, mobility, self-care, interpersonal relationships, participation, and activities of daily living.
Methods: We conducted a descriptive observational study in Fortaleza/CE with women between 18 and 80 years old without cognitive impairment and diagnosed with breast cancer, evaluated 3-12 months after surgery. We collected sociodemographic and clinical data and applied the WHODAS 2.0 (36-item version). The scores from WHODAS range from 0 to 100 for each of its six domains and total score — the higher the score, the greater disability.
Results: The study included 29 women (average age: 55.97). The mean of the WHODAS scores was 21.53 (with a 14.26 standard deviation). The most affected domains were domestic activities (30.34± 21.73) and participation (30.60±20.62), while the least affected were self-care (10.34±12.45) and activities of daily living (13.36± 9.18).
Conclusion: The rehabilitation process after surgery for breast cancer should especially consider domestic activities and women's social participation as therapeutic goals.
Implications: The reported indicators can serve as a basis for outlining care protocols and monitoring the rehabilitation evolution of these patients.
Keywords: Breast neoplasms, Disability assessment, Cancer survivors

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EFFECTS OF DANCE THERAPY ON FUNCTIONALITY AND AUTONOMY IN ACTIVITIES OF DAILY LIFE OF CHILDREN WITH AUTISM SPECTRUM DISORDER

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Background: Autism Spectrum Disorder (ASD) is a disorder that encompasses a wide range of behavioral and cognitive disorders. Due to deficits in perceptual-motor skills, these individuals often experience episodes of addiction in various aspects of functionality. In this sense, an integrated therapeutic approach is necessary, which takes into account the sensorimotor nuances appreciated by ASD.
Objectives: To analyze the effects of dance on functionality and autonomy, in activities of daily living, of children with Autism Spectrum Disorder.
Methods: This is a Blind Follow-up Randomized Clinical Trial, carried out at the Varginhense Foundation for Assistance to the Exceptional, in Varginha/MG. Children aged between 5 and 10 years old, diagnosed with ASD only, excluding comorbidities, were included. Sociodemographic and clinical variables were collected to characterize the sample. Subsequently, the children were assessed using the Childhood Autism Rating Scale and the Pediatric Assessment of Disability Inventory by Adaptive Computerized Testing (PEDI- CAT). Then, the sample was randomized into two groups: the Experimental Group (EG), submitted to dance therapy and multidisciplinary treatment, and the Control Group (CG), accompanied only by multidisciplinary care. There were 14 dance therapy sessions (twice a

week, 40-50 min/), composed of choreographies that explored the movements used during the ADLs. The evaluations were carried out by two independent and trained researchers during the pre-intervention, post-intervention, and one month after the end of the research (follow-up). Comparison analyzes were performed using the SPSS® software, version 22.0 and using the Shapiro wilk test. The significance level adopted for this study was $p<0.05$.
Results: 99 participants were screened for eligibility and 28 were selected (EG n=14; GC n=14). During the intervention, there were no significant differences for the intergroup comparison, in all PEDI-CAT domains ($p>0.05$). However, there were significant differences during the intragroup comparison in the pre/post-intervention for the EG, in the Activity of Daily Living domain: p=0.00; CI= -4.57 to -2.13. And in the pre-intervention/follow-up comparison: p= 0.00, CI=-3.87 to -1.27.
Conclusion: Therefore, it is concluded that dance therapy can positively impact the performance of children with autism in carrying out activities of daily living. However, there were no effects on other aspects of functionality. Thus, future research with n higher than that of the present study and that perform a greater number of sessions are suggested, since these were considered limiting factors for the work.
Implications: The study of therapies focused on the participation and creativity of children with ASD can contribute to the improvement of integrated, inclusive, and multidisciplinary interventions for this public that is rarely addressed in the physiotherapeutic field.
Keywords: Personal Autonomy, Dance Therapy, Autism Spectrum Disorder

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: This work was carried out with the support of the Coordination for the Improvement of Higher Education Personnel and the PPGCR – Unifal/MG
Ethics committee approval: Research Ethics Committee of the Federal University of Alfenas, no: 5.538.805.

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FACTORS ASSOCIATED WITH THE FREQUENCY AND INVOLVEMENT IN THE PARTICIPATION OF YOUNG CHILDREN WITH MYELOMENINGOCELE – PRELIMINARY DATA

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Background: Participation is defined as frequency (measured by attendance and/or variety or diversity of activities) and involvement (participation experience including engagement, motivation, persistence, social connection and affection) in all life situations, and is seen as an essential condition for the development of the child. Children with myelomeningocele have several functional limitations that can lead to restriction of participation. Improving these children's participation requires knowledge about what factors may influence a child's ability to participate in activities of their choice.
Objective: To verify whether factors such as age, mobility performance, access to assistive technology equipment and the presence of environmental facilitators are associated with the frequency and involvement of young children with myelomeningocele participation at home, daycare/preschool and in the community.
Methods: A cross-sectional observational study was carried out with children diagnosed with myelomeningocele, between 6 months and 5 years of age. The dependent variables were Frequency and involvement in participation at home, day care/preschool and in the community, as measured by The Young Children's Participation Environment Measure - YC-PEM. The independent variables were age and access to assistive technology equipment collected through interviews with parents and caregivers, mobility performance measured by the questionnaire: Pediatric Assessment of Disability Inventory – Computerized Adaptive Testing (PEDICAT), and environmental facilitators measured by YC-PEM. Data were analyzed using SPSS version 22.0. To verify the associations between age, mobility performance, access to assistive technology equipment and the presence of environmental facilitators with the frequency and involvement of participation, Spearman's correlation was performed, with a significance level of 5%.
Results: Sixty-five children and their families (mean age 27.91 (±17.36) months) participated in the study. The presence of environmental facilitators at home increased the child's involvement at home (r=0.30, p=0.01). In the daycare/preschool setting, a significant positive association was found between age (r=0.50, $p<0.0001$; r=0.55, $p<0.0001$), mobility performance (r= 0.35, p=0.003; r=0.37, p=0.002) and the presence of environmental facilitators in daycare/preschool (r=0.95, $p<0.0001$; r=0.98, $p<0.0001$), with frequency and involvement, respectively. However, there was a negative association between having access to assistive technology equipment and attendance (r=-0.32, p=0.008) and participation involvement (r=-0.36, p=0.03) in daycare/preschool. In relation to the community environment, factors such as age (r=0.40, p=0.001), mobility performance (r=0.26, p=0.03), and the presence of environmental facilitators (r=0, 35, p=0.003) correlated positively with community engagement.
Conclusion: Preliminary results indicated that the presence of environmental facilitators increases the participation involvement of children with myelomeningocele in all environments. Older and more mobile children are more involved in daycare/preschool and in the community. However, having access to assistive technology equipment that facilitates mobility worsens the frequency and involvement of participation in the daycare/preschool environment.
Implications: These findings highlight the role of the environment for the participation of children with myelomeningocele in different contexts, pointing to the need for more facilitators and environmental changes.
Keywords: Spina bifida, Participation, Mobility

Conflict of interest: The authors declare no conflict of interest.
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PARTICIPATION OF YOUNG CHILDREN WITH MYELOMENINGOCELE

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Background: Myelomeningocele is the most frequent malformation of spina bifida and is characterized by muscle weakness or paralysis

and loss of sensation below the affected lesion level, bladder and bowel incontinence, and hydrocephalus. The functional limitations present can lead to restriction of participation of these children, which includes the frequency and involvement of an individual in a life situation. There are few studies about the participation of these children under 6 years of age in the home, preschool and community environments.
Methods: A descriptive observational study was carried out with children diagnosed with myelomeningocele, between 6 months and 5 years of age, submitted to pre or postnatal surgical correction, regardless of the neurological level, who are followed up by a service of the complex of a university hospital, using the Young Children's Participation Environment Measure (YC-PEM) questionnaire.
Results: Sixty-four children and their families (mean age 28.21 (±17.31) months) participated in the study. Children were more frequently involved in the home environment, mainly in activities related to history and music (mean = 6.51±1.28; 4.33±1.50 respectively) and involving the use of electronics (mean = 6.42± 1.48; 4.26±1.51). Most parents reported that the children's relationship with family members (90.63%), the social aspects of communication and interaction (87.50%), the availability of resources (87.50%) and having enough time (78.13%) supported their children's participation at home. In preschool, the highest frequency and involvement were related to activities involving groups of colleagues (mean = 6.33±0.77; 4.33±1.16) and socializing with friends (mean = 5.89 ±1.59; 3.36±2.21). On the other hand, children participated little in activities involving outings and events (mean = 2.10±2.07; 1.36±1.94). A large number of parents considered that the school environment has more facilitators than barriers. Within the community environment, children were more likely to participate in appointments, and purchases or services. The frequency of children's participation in community activities such as classes and courses were zero. Parents identified characteristics and resources in the community environment that mostly support their children's participation (70.58%), but also recognize aspects that restrict their participation (17.64%).
Conclusion: The participation of young children with myelomeningocele is relatively high in the home environment. However, in the preschool and community setting, it is significantly restricted. These children's participation is influenced in all settings by environmental factors.
Implications.
Implications: These findings provide a foundation for an improved understanding of the participation of children with myelomeningocele, and this information which can assist families and service providers in planning activities that fit with their child's preferences and ensure active participation.
Keywords: Spina bifida, Social participation, Social environment

Conflict of interest: The authors declare no conflict of interest.

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SYMPTOMS OF SEXUAL DYSFUNCTION IN FEMALE DISABLED ATHLETES: A CROSS-SECTIONAL PILOT STUDY OF PREVALENCE IN THE NORTHERN REGION

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Background: Adapted sport is aimed at people with disabilities. The dedication and engagement during sports practices end up exposing this population to the emergence of various health problems related to sports. Female sexual dysfunction is a disorder that can culminate in personal distress and interfere with interpersonal relationships due to anatomical, physiological, psychological, and sociocultural problems.
Objectives: To verify the prevalence of symptoms of sexual dysfunction in female athletes with disabilities.
Methods: Observational epidemiological research of quantitative and descriptive cross-sectional character, carried out with female para-athletes. Data collection was performed using the Google-Forms tool, divided into sections: presentation of the research in video and Informed Consent Form (ICF), sociodemographic data, obstetric data and the Sexual Function Index (FSFI) questionnaire; initially as a pilot study, tested in the North region, in Belém do Pará. The data were transferred from the platform to Excel 2019, tabulated, and analyzed.
Results: The pilot research had 3 participants, aged 32±11 years, self-declared black (black and brown), heterosexual, all of them women with physical disabilities, practitioners of 2 different modalities of adapted sport (fencing and wheelchair dancing). Regarding obstetric history, only one reported 1 pregnancy, which evolved into abortion. The FSFI, in the desire domain, participant 1 (P1), participant 2 (P2) and participant 3 (P3) respectively presented scores of 3.6, 3.6 and 2.4 points, in the excitation domain, P1- 0.9, P2- 0.6 and P3- 4.2 points, in the lubrication domain, P1- 2.7, P2- 0 and P3- 6 points, in the orgasm domain, P1- 2.4, P2- 0 and P3- 6 points, in the satisfaction domain, P1- 0, P2- 0 and P3- 4.8, and in the pain domain, P1- 1.6, P2- 0 and P3- 6 points. According to each domain, there was a lower score in the satisfaction score, with a maximum score of 4.8 points. The total score per participant was: P1- 11.2 points, P2- 8.4 points, and P3- 29.4 points. At the end of the application, final results the scores of each domain multiplied by a factor that homogenizes the influence of each domain on the total score, it is possible to discriminate between the populations with higher and lower risk of presenting sexual dysfunction, with a cutoff point defined as 26 for the population of origin of the instrument, where values equal to or below this point would indicate sexual dysfunction. Thus, two participants had scores below 26 points, which may indicate symptoms of sexual dysfunction.
Conclusion: It is noteworthy that the data presented, even with the reduced n, point to the need to describe these symptoms in this population, outline their profile and epidemiological data.
Implications: the number of athletes of high-performance Paralympic sport from the North region has been growing, standing out in the national and international scenario, making this research a great stimulus for prevention actions.
Keywords: Sports for People with Disabilities, Sexual dysfunctions, Interpersonal Relations

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MEASUREMENT PROPERTIES OF THE SPINAL APPEARANCE QUESTIONNAIRE IN ADOLESCENTS WITH IDIOPATHIC SCOLIOSIS: A SYSTEMATIC REVIEW

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Background: Scoliosis is defined as a three-dimensional deformity of the spine characterized by lateral tilt and axial rotation of the vertebrae. Its magnitude in the frontal plane is identified by a Cobb angle greater than 10°.
Objectives: The aim of the study was to systematically examine the clinimetric properties of the Spinal Appearance Questionnaire (SAQ) in its cross-cultural adaptations in different languages.
Methods: The research protocol has been registered in the International Prospective Registry of Systematic Reviews (PROSPERO) CRD42021250114. The databases Medline (PubMed), CINAHL, EMBASE, Science Direct, PsycINFO and WorldWideScience.org. Used for screening studies until July 16, 2022. Records on the development, evaluation and translations of the SAQ instrument with adolescents in idiopathic scoliosis were included in this review. In addition, two reviewers defined whether the studies were eligible, as well as analyzed their psychometric properties of Internal Consistency, Reliability, Content Validity, Cross-cultural Validity, Construct Validity and Structural Validity, according to Consensus-based Standards for the Selection of health Measurement Instruments (COSMIN). The Grading of Recommendations Assessment, Development, and Evaluation (GRADE), recommendation of modified quality classification was applied for evidence synthesis.
Results: 95 articles were selected by title and abstract. After the removal of duplicates, complete reading and search in the references, there were 13 studies in this review. The original version of the SAQ was described in English and its analysis was made in 2 articles and the instrument was translated into Polish, Canadian French, Simple Chinese, Spanish (Europe), Danish, Traditional Chinese, Portuguese (Brazil), Korean, German, Turkish and Persian. The evidence was moderate for construct validity, low for internal consistency, very low for reliability and cross-cultural validity; the properties of content and structural validity did not present minimum data for classification.
Conclusion: The quality of the clinimetric properties of the SAQ instrument for patients with Adolescent Idiopathic Scoliosis was low, due to lack of clinical analysis properties or questionable methodological quality. However, we recommend the instrument for evaluating the self-perception of the spine in adolescents due to its own organizational characteristics, its most current translation in the language. The Persian version stood out from the others for its sample and organization of clearly demonstrated statistical tests, compatible with the general purpose of the research and strengthening the exposures of the measurement properties experienced.
Implications: We are cautious about using the questionnaire to measure self-image in adolescents with idiopathic scoliosis in clinical practice. Based on the analysis of the quality of the properties suggested by COSMIN, the Spinal Appearance Questionnaire presents dubious quality in general. The Persian version, perhaps because it is more current, complies with the proposed guidelines. We suggest that further translation and validation studies of the SAQ be based on current recommended guidelines.
Keywords: Scoliosis, Outcome measures reported by the patient, Systematic Review

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not applicable.

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ASSOCIATION BETWEEN PAIN AND SOCIAL PERCEPTION IN BRAZILIAN MIDDLE-AGED AND OLDER ADULTS: ELSI-BRAZIL

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Background: Pain among middle-aged and older adults is a significant global public health burden. Examining the ageing process and potential risk factors for this condition is important to guide actions to preserve this population's health and quality of life.
Objectives: To analyze the association between interpersonal relationships and pain in Brazilian middle-aged and older adults.
Methods: This is a cross-sectional study based on data from the second phase of the Longitudinal Study of Brazilian Aging (ELSI-Brasil), conducted from 2019 to 2021. The survey was conducted with Brazilian participants aged 50 years or older. The evaluated outcome was pain, measured by the question, "Do you feel any pain that often bothers you?" (Yes/No). An association analysis between pain and social perception was performed. Pearson's chi-square test was used to analyses dependent and independent variables, with correction for research design for two-way tables, and logistic regression for statistically significant variables ($p<0.05$). For prevalence, a 95% confidence interval was calculated.
Results: A total of 9875 individuals with a mean age of 66 (50 to 109) years were included in this secondary analysis. No association was found between age and the presence of pain ($p < 0.059$), not even by age group ($p < 0.017$). There were statistically significant associations between pain, female sex ($p < 0.001$), suffering discrimination ($p < 0.001$), not having friends ($p < 0.001$), experiencing financial problems for their son or daughter ($p < 0.001$), being a victim of violence ($p < 0.001$) and loneliness ($p < 0.001$).
Conclusion: It is concluded that an association was found between some elements of social perception and pain in Brazilian middle-aged and older adults.
Implications: Due to the association presented in our study, it is interesting that issues related to social perception are taken into account for better pain control and treatment in this population.
Keywords: Pain, Older adults, Social perception

Conflict of interest: The authors declare no conflict of interest.
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ACUTE RESPONSES OF TWO HIIT PROTOCOLS IN INHIBITORY CONTROL IN CHILDREN AND ITS RELATIONSHIP WITH HAND GRIP STRENGTH

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Background: Physical fitness can interfere with the inhibitory control of children, one of which is static muscle strength (SMF). However, the findings in the literature are insufficient to relate handgrip strength and inhibitory control. Physical exercise has been identified as a strategy for improving cognitive function and some evidence indicates that an acute session of high-intensity interval training (HIIT) causes improvements in executive functions. Furthermore, it is necessary to clarify the dose-response effect of exercise on executive functions in children with different levels of physical fitness.
Objectives: To investigate the acute implications of two HIIT protocols on inhibitory control in schoolchildren.
Methods: The research was carried out in a public school in Belém-PA with 4th grade students and had a sample of 21 children aged 9 to 10 years, with the intention of defining the strength levels, the dynamometry test was applied for stratification of the sample into two groups (more force and less force). In this crossover randomized clinical trial, participants performed two HIIT protocols (Progressive and Tabata) on two days separated by an interval of 72 hours. HIIT Tabata lasted 4 minutes with 8 sets of 20 seconds of maximum effort and 10 seconds of rest. The progressive HIIT lasted 5 minutes, with 5 series of 20 seconds of maximum effort followed by 30, 40, 50, 60 and 20 seconds of passive rest respectively, the exercises used body weight. The inhibitory control was evaluated by the Flanker test and the congruent and incongruent response times were analyzed. The test was performed at rest and repeated 11 minutes after performing the exercises. Results were analyzed by estimation statistics and results expressed as significance (p), range (95%) and effect size (g).
Results: after performing progressive HIIT, a reduction in the reaction time of the incongruent condition of children with less strength was observed (g = -0.277); (p= 0.0224; 95.0% CI -0.537, -0.0774), different for the group with more strength that did not show improvement in the same condition (g=0.0421; p= 0.9; 95.0%CI -0.394, 0.662). No differences were found in congruent reaction time.
Conclusion: We conclude that an acute session of high-intensity exercise with progressive rest can positively affect the incongruent reaction time in inhibitory control tests of children with less strength. However, in this study, children with more strength did not have the same benefit in both models of high-intensity exercise.
Implications: This research shows that progressive HIIT can be used as an alternative strategy to benefit children with lower SMF in their inhibitory control and academic performance due to its accessibility and low investment.
Keywords: Executive Function, Basic education, High Intensity training

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Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Pará; 5,443,373

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CUTOFF POINT FOR TOTAL FAT MASS TO IDENTIFY OF OBESITY IN COMMUNITY-DWELLING OLDER WOMEN: A CROSS-SECTIONAL STUDY

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Background: Obesity is a public health problem defined as an excess accumulation of body fat. The obesity has an increasing prevalence, affecting more than 650 million adults worldwide. The World Health Organization recommends assessing obesity using a body mass index (BMI) $\geq$ 30 kg/m2 as the cutoff point for obese individuals. However, the BMI classification has its limitations because it is not able to discriminate fat mass from lean mass. In addition, with aging, changes in body composition occur, such as a reduction in lean mass and an increase in body fat, without changes occurring in BMI.
Objective: To establish a cutoff point for total fat mass to identify obesity in community-dwelling Brazilian elderly women.
Methods: This was a cross-sectional study involving elderly women evaluated at the Laboratório de Fisiologia do Exercício at the Universidade Federal dos Vales do Jequitinhonha e Mucuri from June 2016 to June 2017. Participants were submitted to anthropometric (weight, height, and BMI) and body composition (total fat mass) assessments measured using dual-energy X-ray abdominmetry (DXA Lunar Type DPX, 2005 software). The sample was categorized by nutritional status based on the obtained BMI. Data were analyzed using the receiver operating characteristics curves and the Youden Index determined the cut-off point. Statistical significance was set at 5%.
Results: One hundred and sixty-one elderly women aged between 65 and 96 years (74.32$\pm$7.16) participated in the study. According to BMI, 47.8% of the sample was categorized as obese (BMI $\geq$ 30 kg/m2). The area under the curve value was satisfactory (AUC: 0.94) and the ROC curve calculated. The cut-off point for the prediction and determination of obesity in community-dwelling elderly Brazilian women was 25.4 kg of total fat mass (Sensitivity: 0.81; Specificity: 0.94). In addition, the cutoff point presented satisfactory positive and negative predictive values (93.94% and 84.21%, respectively), demonstrating good accuracy in identifying obesity.
Conclusion: Obesity is a chronic condition commonly associated with other comorbidities throughout life. Therefore, its early identification is crucial for monitoring and interventions in the context of obesity. Considering the variety of body composition assessment instruments, it is clinically important to propose an alternative for the diagnosis and a cutoff point for the total fat mass that is capable of identifying the obese individual, using DEXA, which is known to present a high accuracy of body composition measurement.
Implications: The findings of this study may support future studies that investigate obesity or sarcopenic obesity using a gold standard instrument for assessing body composition.
Keywords: Obesity, Fat mass, Body composition

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Ethics committee approval: Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), number 1.461.306.

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INFLUENCE OF AN EXERCISE PROTOCOL ON THE REDUCTION OF VENOUS ULCER AREA: CASE STUDY

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Background: Venous ulcers (VU) are open wounds that attack the integumentary system and are caused by venous dysfunction. They are a serious public health problem, affecting approximately 14% to 22.8% of the world's population and generating social impacts such as isolation, absence from work, early retirement, low self-esteem and depression. In addition, there is the economic impact that is related to the difficulty of healing and frequent recurrence of the wound, which generates costs for the health system and for the person with VU. Physical therapy interventions can be used to assist in the healing process. Among the therapies, physical exercises stand out.
Objective: To evaluate the area of chronic venous ulcers in patients submitted to an exercise protocol.
Methods: Case study, with two volunteers and three UV, composed of a physical exercise protocol for lower limbs during sixteen sessions, two per week. Eligibility criteria were: >18 years; having chronic venous insufficiency CEAP 6, without associated arterial disease; and ulcers >1 cm^2. Study with blinding of the evaluator and the researcher who performed the analyses.
Results: UV 01 started with an area of 40.7 cm^2 after treatment the area became 17.8 cm^2; the UV 02 before the treatment was 42 cm^2, after, the area became 27 cm^2. UV 03 had an area of 73.9 cm^2 before treatment and ended with 35.5 cm^2.
Conclusion: The physiotherapeutic treatment with physical exercises for the lower limbs, consisting of stretching, strengthening, aerobic, proprioception and relaxation exercises, provided a reduction in the area of the venous wound.
Implications: Physical exercise can help in the conventional treatment of wounds, thus helping in healing time, delaying ulcer recurrence, in addition to all the already known benefits of exercise. In this way, this case study can be the basis for work with a larger sample number so that an adequate treatment protocol can be defined that enhances healing and improves the patient's vascular condition, preventing or reducing cases of recurrence.
Keywords: Venous ulcer, Healing, Physical exercise

Conflict of interest: The authors declare no conflict of interest.
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COGNITIVE FUNCTION AND CARDIOVASCULAR RISK FACTORS IN AGED WITH AND WITHOUT DIABETES

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Background: Chronic subclinical inflammation (inflammaging) and changes in the predominance of type, destruction and endocrine function of adipose tissue are related in aging. Both contribute to the pathogenesis of chronic noncommunicable diseases, such as diabetes and cognitive decline. Considering that age-related cognitive decline is characteristic of physiological aging, and that Type 2 Diabetes Mellitus (DM2) can accentuate the decline in cognitive function and is a risk factor for the development of dementia, it is of interest to study the relationships of cognitive function and anthropometric markers and analyze its difference in older adults with and without diabetes.
Objectives: To investigate differences in cognitive function and anthropometric indices of older adults with and without DM2.
Methods: Sixty-four older adults participated (women = 62), including 20 participants with diabetes (69.32 $\pm$ 4.48 years old, 8.3 $\pm$ 4.0 years of schooling) and 44 participants without diabetes (67.91 $\pm$ 5.40 years of age, 9.0 $\pm$ 4.5 years of schooling). The groups were matched by age, education, and physical activity. All participants underwent cognitive (Mini-Mental State Examination - MMSE) and anthropometric assessment, including Body Mass Index (BMI), Waist Circumference (WC), Hip Circumference (HC), Waist-Height Ratio (WHR), Waist-Hip Ratio (WHR), Body Adiposity Index (IAC) and Conicity Index (C Index). Based on the analysis of normality (Shapiro-Wilk) the Student's t test and the Mann-Whitney U test were performed for non-parametric variables. The significance level was set at $p<0.05$.
Results: All participants had normal cognitive performance, considering the cut-off point adjusted for education. Despite the cognitive performance within the normal range, the older adults with DM2 showed lower cognitive performance (26.92 $\pm$ 2.26 points) in the MMSE assessment when compared to participants without diabetes (28.09 $\pm$ 1.56 points; $p < 0.03$). No significant differences were found between participants with and without diabetes, respectively, in: BMI (30.09 $\pm$ 5.41; 28.46 $\pm$ 4.97; $p < 0.722$); WC (99.62 $\pm$ 12.43 cm; 94.56 $\pm$ 11.54 cm; $p < 0.560$); HC (103.83 $\pm$ 11.56; 100.16 $\pm$ 13.03; $p < 0.252$); WHR (0.66 $\pm$ 0.10; 0.63 $\pm$ 0.07; $p < 0.078$); WHR (0.96 $\pm$ 0.05; 0.95 $\pm$ 0.72; $p < 0.412$); IAC (37.51 $\pm$ 8.68; 36.52 $\pm$ 7.48; $p < 0.426$); C index (1.35 $\pm$ 0.09; 1.33 $\pm$ 0.11; $p < 0.663$).
Conclusion: Cognitively healthy older adults with DM2 showed lower cognitive performance compared to participants without DM2, even without differences in anthropometric markers.
Implications: To recognize the influence of DM2 in accelerating age-related cognitive decline is important for the inclusion of preventive cognitive stimulation strategies for the healthier aging of older adults with diabetes
Keywords: Diabetes mellitus, Cognition, Aging

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Acknowledgment: Neurodegeneration and Infection Research Laboratory (LNI).
Ethics committee approval: Research Ethics Committee of the João de Barros Barreto University Hospital. Opinion n° 858.134.

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PRELIMINARY RESULTS OF THE EVALUATION OLFACTION, TASTE, ORAL STEREOGNOSY AND SWALLOWING IN COVID-19 AFFECTED INDIVIDUALS AFTER CLINICAL RECOVERY

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Background: In 2019 a highly contagious virus responsible for the current pandemic, called SARS-CoV-2, emerged in China. Among the main symptoms are fatigue, fever, dry cough, and respiratory failure. However, some symptoms have stood out and attracted researchers: anosmia and dysgeusia. Sensory function is related to motor function. Thus, the evaluation of the sensory-motor-oral system in a broader way becomes indispensable, allowing a better understanding of these alterations in this public.
Objective: The purpose of this study was to preliminarily analyze, by means of standardized clinical protocols, the orofacial myofunctional function aspects of adult individuals affected by SARS-CoV-2 after clinical recovery, from a comparative study with a control group, and to relate the literature findings to the aspects identified.
Methods: This is a descriptive observational study. Individuals recovered from COVID-19 will be recruited to the study to compose the research group. Those who did not have the disease will be included in the control group, considering the inclusion and exclusion criteria for both groups. Specific tests were selected, according to feasibility, to evaluate the functions of smell, taste, oral stereognosis and swallowing, which will be applied during an individual session, according to the manufacturer's/tenderer's instructions, by previously trained evaluators.
Results: As for the orofacial myofunctional system and swallowing, the GP (research group) showed better performance in the evaluation, although with a low difference in the results. Although the CG (control group) and GP had adequate answers higher than 50% in the oral stereognosy test, when compared, the GP showed better performance. There is an alteration of the olfactory system when the groups are compared, with greater impairment in the GP.
Conclusion: It was possible to confirm the existence of orofacial myofunctional manifestations in individuals recovered from COVID-19. It was possible to have an integral and direct evaluation of the patient, which will allow the maintenance of care after the cure of the underlying disease.
Implications: It is difficult to find collections on taste disorders, oral stereognosia, and swallowing in post-COVID-19 patients, highlighting the importance of this study. Moreover, there is no research on these disorders, specifically for the public from the Federal District. Most studies are focused on patient survival; thus, this research aims to investigate the sequelae the disease to enable a holistic view for the maintenance of care.
Keywords: COVID-19, Smell, Taste

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
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THERMOMONITORING OF THE CALCANEAL TENDON DURING ISOMETRIC AND ISOTONIC EXERCISES ASSOCIATED WITH PHOTOBIOMODULATION

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Background: To establish effective protocols for the prevention and treatment of calcaneal tendinopathies, it is necessary to previously understand the physiological adaptations and thermal alterations provided by exercise in the tendinous tissue. The relationship between the onset of pathological processes and tendon temperature is not clear in the scientific literature, in addition to the fact that it is still unknown whether benefits can be added to the treatment through the application of photobiomodulation (PBM) on the tendon immediately before resistance exercise.
Objective: To analyze the thermal pattern of the skin over the Achilles Tendon (AT) of healthy individuals submitted to PBM in association with isometric and isotonic exercises, in addition to verifying whether the protocols have an acute effect on the muscle strength of the triceps surae, subjective perception of exertion and occurrence of pain.
Method: Experimental, randomized, single-blind study. The sample consisted of 32 healthy, physically active volunteers, divided into 2 groups (n= 16), submitted to evaluation by infrared thermography (T360, Flir Systems) in 10 times (rest, during and after the protocol), of strength triceps surae muscle using the DD-300 isometric dynamometer; of perceived exertion by the modified Borg scale and pain by the Numerical Scale, before and after the execution of the protocols. The isometric group performed 3 contractions maintained for 45s and the isotonic group performed 3 sets of 15 repetitions, lowering the heel to the maximum range of dorsi and plantar flexion (1s concentric phase and 2s eccentric phase). Both used the dominant limb with the forefoot on a step, adopted a 15s interval between series and totaled 165s of execution. The exercises were preceded by PBM by LED (TENDLITE, California, USA) sham and real, with a total dose of 20.3 J distributed in 4 points over the AT, with a washout of one week between the two interventions. Data were processed in SPSS version 20.0 adopting a significance level of 5% and a confidence interval of 95%. The paired t-Test was used to compare strength, pain and perceived exertion, and the repeated measures Anova was used to compare temperature means.
Results: There were significant interactions in the analysis time x exercise, in which the isotonic group presented higher temperatures than the isometric group (p=0.001 CI T10=0.387 to 1.010 η2=0.141), greater perception of effort (p=0.001) and pain (p=0.001). There were no significant changes in strength measures with prior application of PBM for the isometric (p=0.790) and isotonic (p=0.597) groups.
Conclusions: Isometric exercise can be better tolerated in the early stages of rehabilitation because it presents less thermal stress and discomfort. Isotonic exercise considered the gold standard in the treatment of tendinopathies of the calcaneus, mainly with eccentric overload, presented greater thermal amplitude. However, this increase in tendon temperature, as well as the changes caused by it, still needs to be studied as to the real benefits. The dose of PBM applied did not cause immediate changes in muscle strength or pain perception.
Implications: This study contributes to knowledge about the thermal behavior of the tendon in response to exercise, its association with PBM, and its applicability in prevention and rehabilitation.
Keywords: Thermography, Physical exercise, Achilles tendon, Phototherapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: My family, employees, and volunteers.
Ethics committee approval: Ethics and Research Committee of the Health Sciences Center of the Federal University of Paraíba (CEP/CCS/UFPB), under CAAE 42496921.0.0000.5188 and opinion n° 4563980.

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THE QUALITY OF FREE APPLICATIONS AVAILABLE FOR KIDS 2 TO 3 YEARS OLD

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Background: Early childhood is a crucial period for the individual since it promotes child growth and development, which is influenced by environmental resources, types of toys, family practices, among others. Currently, digital media are one of the main pastimes of children, whose use is growing exponentially. There is a great offer of applications in virtual stores, without corresponding to their quality, which aim only to entertain and distract the user. Therefore, it is necessary to investigate whether the available applications are able to promote interactivity and children's learning, in addition to offering recreational and educational content that stimulate the potential of that age group.
Objectives: Evaluate the interactivity and learning of games/applications for children aged between two and three years, available free of charge on the internet.
Methods: This is a descriptive study, preliminary to the development of a randomized controlled study. It started with the search and selection of applications in the Google Play® online store, compatible with the Samsung A7 Tablet operating system; associated with Google search and the Tablet's own app store, combining terms for learning and interactivity purposes. Then, each application was used by 15 two- to three-year-old children from a municipal public education institution, in a single session to verify the following criteria: (1) interactivity: critical thinking, active participation, decision-making; (2) learning: activities that stimulate cognitive, fine motor, receptive language, expressive language, and social-emotional development; (3) suitability: age, developmental period, multiple domains and (4) outcomes: challenging, non-frustrating activity that provides feedback. For analysis, a form was produced with 15 questions evaluating learning, interactivity, suitability, and results, with response options on a Likert scale, where 0 (“not at all”) to 3 (“quite a lot”), completed by the researchers through the participant observation technique. For the analysis of responses, scores were calculated on each axis, with a maximum value of 1.00, with 0.6 being the minimum value considered appropriate.
Results: By combining the terms searched, 20 applications were found, of which only 7 were selected because they were age-appropriate and freely available. As for the evaluated criteria, the apps obtained an average score of 0.74 in the learning item (0.59 - 0.84), 0.82 in interactivity (0.41-0.95), 0.78 in adequacy (0. .53 -0.90) and 0.81 in the results item (0.47 – 0.96).
Conclusion: Just over 2/3 of the applications showed good results in terms of interactivity, learning, adequacy, and result, revealing their potential to stimulate critical thinking, active participation and decision-making in children, as well as to enhance their development. child development.
Implications: Guiding the population not only about the best apps, but also about the search and selection criteria, giving autonomy to those responsible for identifying games that will benefit the children who will use them. In addition, the selection of applications contributed to the realization of a randomized study, which has the purpose of investigating the influence of passive and active media on child development.
Keywords: Child, Child development, Mobile Applications

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REHABILITATION OF THE MOTOR FUNCTION OF PATIENTS AFTER STROKE: A BIBLIOMETRIC ANALYSIS

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Background: Stroke is one of the leading causes of mortality and disability worldwide. Post-stroke rehabilitation is an essential intervention to help patients regain motor function and physical independence. However, it is important to follow the evolution of scientific studies on the subject.
Objectives: Perform a bibliometric analysis on motor function rehabilitation in post-stroke patients.
Methods: This study was based on an analysis of bibliometric indicators of original articles indexed in the Web of Science database. The search strategy was carried out in March 2023, using the descriptors: *"Stroke survivors"* OR *"After stroke"* AND *"Motor function"* AND *"Rehabilitation"*. Search records were saved in .txt format and analyzed in the R program (version 4.2.2) using the Bibliometrix package (version 4.1.2).
Results: We identified 1,883 articles published between 1970 and 2023, involving 25,434 authors, with an annual growth rate of 7.53%. The international collaboration rate was 23.79%, with the United States and China standing out. The most influential journal was Disability and Rehabilitation, with the highest number of publications (n=97). The most influential authors on the subject included Bruce Ovbiagele of the University of California (USA) and William Zev Rymer of Northwestern University (USA), both with 31 publications. The study entitled *"Robot-assisted movement training compared to conventional therapy techniques for the rehabilitation of upper limb motor function after stroke"* by Peter Lum and colleagues (2002) was the most cited study (n=764). The study indicated clinical and biomechanical advantages of robot-assisted movement training compared to conventional techniques for the rehabilitation of upper limb motor function after stroke. The countries with the highest number of publications on the subject are the United States (n=1,782), China (n=800) and the United Kingdom (n=741), with the United States having the highest number of citations (n=11,722). The co-occurrence network analysis of the authors' keywords resulted in the formation of two clusters, with emphasis on themes related to rehabilitation *("exercise", "physical activity", "gait", "balance"*) and outcomes *("quality of life", "disability", "depression", "social support", "self-efficacy"*).
Conclusion: The bibliometric analysis of motor function rehabilitation in post-stroke patients revealed a significant increase in the last two decades, with emphasis on outcomes such as quality of life, disability, depression, social support, and self-efficacy.
Implications: These findings have important implications for the field of knowledge, providing insight into the most investigated lines of research, and contributing to the formulation of future studies. In addition, identifying the most prominent authors and journals can help guide health professionals to the most reliable and up-to-date sources of information on the subject.
Keywords: Physical Activity, Movement, Quality of Life

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RELATIONSHIP BETWEEN TRUNK AND LOWER KICKING LIMB MOMENT AND MAXIMUM KICK POWER IN SOCCER

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Background: Kicking is a sporting gesture that generates high stress demands on the musculoskeletal system. The participation of the trunk in the kick has been studied since the flexion-extension and rotation moments of the trunk and pelvis can favor the energy transmission mechanism for the kicking lower limb. This allows the performance of the maximum kick with sharing of demands between the trunk and the lower limb. Thus, the magnitude of the joint moment produced in the trunk during the kick can influence the magnitude of the moment produced in the lower limb and the power of the kick. However, there are no reports on the existence of these possible relationships.
Objectives: To investigate the relationship between bisegmented trunk moments (thoracolumbar and lumbopelvic) and kicking lower limb moments, as well as kick power (foot velocity pre-impact with the ball) in a maximum instep soccer kick.
Methods: Cross-sectional study carried out with eighteen male volunteers who practiced soccer as a recreational activity (1x/week, for at least 1 year and without musculoskeletal injuries in the last 6 months), between 18 and 35 years old, with a body mass index ≤ 25 kg/m^2. Data collection was carried out at the Movement Analysis Laboratory (LAM), at the Federal University of Minas Gerais (UFMG). The variables collected were the peak moment of ipsilateral thoracolumbar and lumbopelvic flexion and rotation, peak moment of flexion of the right hip, peak moment of extension of the right knee, and peak velocity of the foot pre-impact with the ball. Pearson's correlation analyzes were performed to investigate the relationships between trunk moment and lower limb moment and pre-impact foot velocity.
Results: Peak thoracolumbar flexor moment had a moderate to good significant negative correlation with knee extensor peak moment (r= -.519, $p < 0.05$). Peak ipsilateral thoracolumbar and lumbopelvic rotator moments, and peak knee extensor and hip flexor moments had significant positive correlations, from moderate to good, with pre-impact foot velocity peak ($.481 \leq r \geq .677$ $p < 0.05$). Peak ipsilateral thoracolumbar and lumbopelvic rotator moments had significant positive correlations, from moderate to good, with peak hip flexor moment (r= .671, $p < 0.01$; r= .659, $p <$ 0. 01, respectively).
Conclusion: There are relationships between the magnitudes of trunk moment, the magnitudes of hip and knee moments and kick power. There seems to be a compensatory relationship in which the knee extension moment is greater in those individuals who produce lower thoracolumbar flexion moment. In addition, more powerful kicks are related both to greater hip flexion and knee extension moments and to greater thoracolumbar and lumbopelvic rotation moments in the transverse plane.
Implications: The findings make it possible to explain possible mechanisms of stress demands that can lead to typical kicking injuries, providing the planning of prevention and rehabilitation strategies.
Keywords: Soccer, Kick, Trunk

Conflict of interest: The authors declare no conflict of interest.
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ASSOCIATION BETWEEN POSTURAL BALANCE AND LEVEL OF PHYSICAL ACTIVITY IN PATIENTS ON HEMODIALYSIS

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Background: Patients on hemodialysis have lower level of physical activity due cardiovascular and musculoskeletal changes caused by chronic kidney disease and the hemodialysis process. The lower level of physical activity can contribute to the impairment of physical function, however, the relationship between postural balance and level of physical activity needs further investigation.
Objectives: To evaluate the association between postural balance and level of physical activity in patients on hemodialysis.
Methods: A cross-sectional study was carried out with patients who were 18 years of age or older and who were on regular hemodialysis for at least three months. Patients unable to perform the proposed assessments, with psychiatric impairments and severe and/or unstable comorbidity were excluded. Postural balance was assessed by the Mini Balance Evaluation Systems Test (Mini-BESTest) and the level of physical activity was investigated by the daily steps count recorded by the accelerometer Actigraph wGT3X-BT. Data normality was verified using the Shapiro-Wilk test. The correlation between the Mini-BESTest score and the daily steps was calculated using the Spearman correlation coefficient (ρ) and the association between these variables was investigated using a multivariate linear regression model. The significance level was $p < 0.05$.
Results: Ninety-six patients (59.2 $\pm$ 12.3 years; 57.3% male) were evaluated. The median of the Mini-BESTest score was 22.0 (4.0) and the median of daily step count was 3750 (3009). The Mini-BESTest score was positively correlated with the daily step count ($\rho = 0.449$; $p < 0.001$). This association remained statistically significant after adjusting for age, gender, time on hemodialysis, hemodialysis efficacy index, and presence of neurological disease ($R = 0.540$; $R^2 = 0.292$; adjusted $R^2 = 0.243$; $p < 0.001$).
Conclusion: This study showed that a better performance in postural balance was associated with a higher level of physical activity in hemodialysis patients.
Implications: Increasing the level of physical activity can be suggested in rehabilitation programs for hemodialysis patients and can contribute to improving the postural balance of these patients.
Keywords: Renal Dialysis, Postural Balance, Exercise

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics committee of University Hospital of Federal University of Juiz de Fora (N° 4.106.335/2020) and of School of Medicine of Barbacena (N° 3.741.115/2019).

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FEAR OF FALLING, PHYSICAL FUNCTION AND QUALITY OF LIFE IN PATIENTS ON HEMODIALYSIS

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Background: Patients with chronic kidney disease on hemodialysis have physical function impairment, which, added to the effects of the dialysis process, contributes to an increase in the risk of falls in these patients. The history of falls is associated with fear of falling in hemodialysis patients, but its relationship with physical function and quality of life requires investigation.
Objectives: To compare physical function and quality of hemodialysis patients with normal and high fear of falling
Methods: A cross-sectional study was carried out with patients aged 18 years or older, with chronic kidney disease and on HD for at least three months. Patients unable to perform the assessments, who had psychiatric impairments and severe and/or unstable comorbidity were excluded. Fear of falling was assessed using the Falls Efficacy Scale-International, whose score was used to classify patients into normal (<25) and higher (≥ 25) fear of falling groups. Physical function was assessed by muscle strength of upper limb (hand grip - HG) and lower limbs (5 repetitions sit and stand test - STS5), walking speed (4.6 meters), functional mobility (Timed up and Go - TUG) and dynamic postural balance (Mini Balance Evaluation Systems Test - Mini-BESTest). In addition to the physical activity level questionnaires (Human Activity Profile - HAP) and quality of life (36-Item Short Form Health Survey-SF-36, by physical and mental summary components). Data normality was verified using the Shapiro-Wilk test. Comparisons between groups were performed using the Student's t-test or Mann-Whitney test. The significance level was $p<0.05$.
Results: A total of 112 patients (58.7±12.9 years; 56.3% male) were evaluated, of which 55.4% were classified as normal and 44.6% a higher fear of falling. The higher fear of falling group performed worse on the HG[24.0(12.0) vs. 30.0(18.0) kilograms strength; $p<0.001$)], STS5 [14.6(5.3) vs. 11.5(5.5) seconds; p=0.002] tests, gait speed (1.2±0.2 vs. 1.4±0.3 meters/second; p=0.004), TUG [8.8 (2.4) vs. 7.8(2.8) seconds; p=0.009], and Mini-BESTest [21.0(3.0) vs. 23.0(5.0); p=0.026] compared to the normal fear of falling group. Furthermore, the same group showed worse scores on the HAP (52.0±14.7 vs. 60.7±12.6; p=0.001) and physical (39.3±8.5 vs. 45.9 ±8.9; $p<0.001$) and mental [28.5(23.7) vs. 41.9(29.4); p=0.004] summary components of the SF-36.
Conclusion: Patients with higher fear of falling had worse performance in physical function, lower level of physical activity and greater impairment of quality of life compared to those with normal fear of falling.
Implications: Interventions that reduce the fear of falling can contribute to improving physical function, increasing the level of physical activity, and reducing the impairment of the quality of life of patients on hemodialysis.
Keywords: Renal Dialysis, Fear, Accidental Falls

Conflict of interest: The authors declare no conflict of interest.
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MUSCLE STRENGTH ASSESSMENT TOOLS FOR HOSPITALIZED OLDER ADULTS

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Background: Muscle weakness associated with hospitalization is known to be a significant predictor of functional decline in older adults hospitalized for acute conditions. Previous studies have shown that physical and functional decline associated with hospitalization in older adults considerably lengthened hospital stays and increased post-discharge caregiver burden, risk of disability and death and medical expenses. The most widely used muscle strength assessments in hospital settings are handgrip dynamometry and the Medical Research Council (MRC) scale. However, the MRC score is time-consuming to obtain in hospitalized patients and requires adequate training. As such, in hospital settings handgrip dynamometry is noteworthy for its consistent measurements, short application time, simplicity and objectivity in application and scoring and ability to identify overall muscle strength.
Objective: Investigate the association and agreement between handgrip dynamometry measures and the MRC test at admission in hospitalized older adults.
Methods: A methodological (cross-sectional) study with 148 older adults hospitalized in a public hospital in the Federal District, Brazil. Data on age, sex, body mass index (BMI) and engagement in regular physical exercise were collected for sample characterization. The main variable was muscle strength, measured by handgrip dynamometry and the Medical Research Council (MRC) scale. The data were analyzed using descriptive statistics, Spearman's correlation and the Kappa statistic (α=5%).
Results: of the older adults included in the study, 41.9% were women, 79.7% were sedentary, aged 60 to 101 years (median = 70 years), taking 5.14 continuous use drugs, with an average BMI of 26.22 Kg/m^2. The average handgrip strength was 23.83 Kgf (SD=8.45) and the MRC score was 54.94 points (SD=5.709). Muscle weakness was identified in 60.8% of participants via handgrip dynamometry and in 10.8% via the MRC. There was a moderate correlation (r=0.646; $p<0.001$) between handgrip strength and MRC score and weak agreement (K=0.122; p=0.004) between the muscle weakness diagnoses of the two instruments.
Conclusion: Unlike the muscle weakness diagnoses obtained by handgrip strength assessment, a minority of participants exhibited muscle weakness when evaluated by the MRC scale, displaying weak agreement between the measures investigated despite the moderate correlation.
Implications: These results suggesting that handgrip strength and MRC be used in sequence, with dynamometry as a rapid initial

screening tool that, when abnormal, should be followed by the MRC to specifically identify the typical distribution of muscle weakness. Information on muscle strength from hospital admission to discharge can provide specific starting points for personalized interventions to combat sarcopenia and prevent functional decline in the hospital setting and after acute hospitalization.
Keywords: Aged, Hospitalization, Muscle Strength

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RISK OF SARCOPENIA AND ASSOCIATED FACTORS IN HOSPITALIZED OLDER ADULTS WITH CARDIOVASCULAR DISEASE

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Background: Low muscle strength and mass with possible impaired physical performance characterizes the muscle disease known as sarcopenia. When not diagnosed or treated, the risk of falls, fractures, hospitalization, hospital costs, longer hospital stays, and negative outcomes increases. In the presence of comorbidities, such as cardiovascular diseases, sarcopenia can be significant and serious. In these patients, muscle weakness has attracted considerable attention in recent years since it is deemed an independent risk factor for disability and a strong predictor of premature death. The SARC-F (simple questionnaire to rapidly diagnose sarcopenia), a valid and consistent instrument to detect people at risk of adverse outcomes associated with sarcopenia, including functional decline, can be used as a screening tool. It consists of 5 items self-reported by patients based on their perceptions regarding strength limitations, the ability to walk, rise from a chair, climb stairs and a number of falls.
Objectives: Analyze the risk of sarcopenia and identify associated factors in hospitalized older adults with cardiovascular disease.
Methods: This is a cross-sectional study conducted with 23 hospitalized older adults with cardiovascular disease in a tertiary hospital of the Federal District, Brazil, classified into two groups: with or without risk of sarcopenia according to the SARC-F. Demographic (age and sex), clinical (number of medications and body mass index —BMI) and physical data (muscle strength and mass) were collected. Muscle strength was assessed using handgrip dynamometry and the Medical Research Council (MRC) scale, and mass by means of electrical bioimpedance. These data were compared between the groups using the student's t and Mann-Whitney U tests.
Results: There was a risk of sarcopenia in 39.1% (n=9) of the sample. In comparison analyses, the group of older adults at risk of sarcopenia were older (mean difference: 14.39 years [95%CI 8.23 — 20.55]; p=0.001), exhibited lower handgrip strength (mean difference: 9.36 KgF [95%CI 0.874 — 17.854]; p=0.032), more frequent muscle weakness on the MRC scale ($X^2(1)=5.367$, p=0.047) and lower appendicular muscle mass (mean difference: 0.763 [95%CI 0.113 — 1.414]; p=0.024). The groups showed no differences for sex, BMI and number of continuous use drugs (p>0.05).
Conclusion: This study found that older adults at risk of sarcopenia are older and obtain worse physical results when compared to their risk-free counterparts. The SARC-F was able to identify hospitalized patients with lower strength and muscle mass.
Implications: The findings show the need to identify hospitalized older adults at risk of sarcopenia using a simple, fast, low-cost, non-invasive assessment, which may contribute to the establishment of early identification strategies in a hospital setting, aimed at developing more assertive measures.
Keywords: Aged, Sarcopenia, Risk Factors

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: The authors would like to thank the support of the University of Brasília - Faculdade de Ceilândia, Base Hospital, FAPDF and the permission of all participants.
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RELATIONSHIP BETWEEN CARDIORESPIRATORY FITNESS AND INHIBITORY CONTROL IN CHILDREN AFTER AN ACUTE HIIT SESSION: A CROSS-RANDOMIZED TRIAL

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Background: Studies suggest that acute exercise may be beneficial for executive control (Hillman et al, 2003). This result appears especially in the incongruent condition of the flanker test, where inhibitory control is more necessary. In addition, evidence suggests that complementary cardiorespiratory activity is positively related to executive functions in childhood.
Objectives: To analyze the relationship between cardiorespiratory fitness and inhibitory control and compare the acute effects of two HITT protocols on the inhibitory control of schoolchildren
Methods: This trial included 21 children in the 4th year of a municipal school in the city of Belém. Cardiorespiratory fitness was assessed using the 20-meter shuttle test. The volunteers ran at a pace set by a cell phone application that emitted beeps at specific intervals for each stage. The duration of the test depends on each person's cardiorespiratory fitness. Then, based on the level of cardiorespiratory fitness, the participants were divided into two groups (Good, n=10; Regular, n=11) The method used was the randomized crossover clinical trial, in which all participants performed two separate visits each other for a period of 72 hours. In each visit, the subjects were submitted to a different HIIT protocol: The Tabata protocol lasted 4 minutes with 8 series of 20 seconds of maximum effort and 10 seconds of rest. The Progressive protocol lasted 5 minutes, with 5 series of 20 seconds of maximum effort followed by 30,40,50,60 and 20 seconds of passive rest respectively, the exercises used body weight and consisted of squats, jumps and races. And to evaluate the inhibitory control, the computerized Flanker test was used. The test was applied at rest, before HIIT, and repeated 11 minutes after performing the exercises. Results were analyzed by estimation statistics and results expressed as significance (p), confidence interval (95%) and effect size (g). Congruent and incongruent response time (RT) were analyzed.

Results: The group with higher cardiorespiratory conditioning showed better performance in the reaction time of the incongruent condition after performing the HIIT Tabata protocol (p= 0.0458, g= -0.451, 95.0%CI -0.822, -0.0689). However, the same effect was not observed in the group of children with lower cardiorespiratory fitness (p= 0.339 -0.213 [95.0%CI -0.57, 0.357). No significant differences were found in the congruent condition of the inhibitory control test. The progressive HIIT protocol did not change the RT.
Conclusion: Our findings corroborate some previous findings that suggest that children with greater cardiorespiratory fitness respond more efficiently to an acute HIIT session by showing better inhibitory control
Implications: This study shows that HIIT Tabata can help improve inhibitory control in children with good cardiorespiratory fitness, being an easily accessible and short-term strategy that can be included in the routine of schools.
Keywords: Inhibitory Control, Children, Cardiorespiratory fitness

Conflict of interest: The authors declare no conflict of interest.
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MEASUREMENT PROPERTY TEST OF THE INSTRUMENT OCCUPATIONAL COGNITIVE FAILURES QUESTIONNAIRE (OCFQ)

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Background: Cognitive failure can be understood as mental lapses that occur during the execution of a simple task. These failures can occur in different contexts, such as, for example, in occupational activities, in university students, in everyday life or in any other non-occupational context. The Occupational Cognitive Failures Questionnaire (OCFQ) is a measurement instrument that helps to understand cognitive failures in workers. However, the OCFQ was originally developed in English, requiring cross-cultural adaptation and testing of measurement properties to assess whether the adapted questionnaire can be used with the same confidence as the original questionnaire.
Objectives: This study aims to test the measurement properties of the Occupational Cognitive Failures Questionnaire, translated, and adapted into Brazilian Portuguese. This is an observational, cross-sectional study.
Methods: The study population consisted of workers of both sexes, aged between 18 and 60 years.; and minimum working time on the task of three months. Workers with self-reported cognitive impairment (due to neurological diseases, mental disorders, dependence on alcohol and other drugs, depression) were excluded from the study. Participants were recruited by sharing the questionnaire through the UFSB e-mail, and digital media platforms such as Facebook and Instagram. For data collection, the following questionnaires were used: Sociodemographic Questionnaire; Prospective and Retrospective Memory Questionnaire – PRMQ; Occupational Cognitive Failures Questionnaire - OCFQ, were made available online through the Google Forms platform. The measurement properties were sociodemographic data; reproducibility; internal consistency; and ceiling and floor effect.
Results: The sample consisted of 113 workers, of whom 13 were excluded for not meeting the requested criteria, mostly female workers with an average age of 29.4 years who perform office activities. Internal consistency was calculated using Cronbach's alpha index, with an adequate value of 0.84. The construct validity of the OCFQ and PRMQ instruments obtained Pearson's Correlation Coefficient value r = 0.5. The reproducibility evaluates the reliability tested with an intraclass correlation coefficient (ICC), consistency coefficient (ICCConcistency) with a value of 0.84, and agreement coefficient (ICCAgreement) of 0.1, showing a substantial reliability, and the agreement analyzed through the standard error of measurement (EPM) by the measurement (S.E. mean), with a value of 1.3%. No ceiling and floor effect was found.
Conclusion: We concluded that when testing the measurement properties of the Occupational Cognitive Failures Questionnaire instrument, in the translated and adapted version for Brazilian-Portuguese, it showed good results in terms of content validity, internal consistency, reproducibility, and construct validity.
Implications: Testing the measurement properties of the OCFQ questionnaire and its results makes it possible for professionals who work in occupational environments to use it, with the aim of detecting cognitive deficits in the workplace, to enable preventive actions for the worker, as well as greater safety in the work environment.
Keywords: Cognitive failures, Measurement Property Test, Workplace

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: This research project was submitted to the Ethics Committee and Research Involving Human Beings of the Federal University of Southern Bahia (UFSB), whose approval number is 40398820.4.0000.8467.

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PREVALENCE OF FALLS IN OLDER ADULTS: INTRINSIC, EXTRINSIC AND BEHAVIORAL ASPECTS

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Background: Falls in older adults are the result of a complex interaction between intrinsic, extrinsic, and behavioral factors. Although it is difficult to separate these factors, some studies indicate that environmental risk factors are present in approximately 40% of falls, but there is still a gap in these real factors.
Objectives: To verify the association between environmental risk factors for falls in older adult Brazilians.
Methods: Prospective cohort study, being one of the arms of a larger study "Prevalence of falls in the older adults: Intrinsic, extrinsic and behavioral factors". The study aimed to follow up with 400 patients, both sexes, aged over 60 years and from different regions of Brazil, who had access to the online questionnaire through a link and agreed to participate in the research. The questionnaire had items related to environmental factors in older adults falls. The environmental assessment was carried out using the Home

Fast Brazil self-application instrument. An analysis was performed with the Shapiro-Wilk test, which showed that the data were non-parametric, and thus the data were presented descriptively by the median and interquartile range and the environmental data with nominal variables. significance level $p<0.05$ was adopted.
Results: 405 individuals were evaluated, 39.5% (n=160) ($p<0.446$) characterized as fallers, so the sample of fallers consisted of 39% (n=113) female ($p< 0.882$), an aged median of 67 (63-73) years. It was observed that falls have a higher incidence with tripping 100% (n=67) ($p<0.01$), slipping 100% (n=43) ($p<0.01$), loss of balance 100%(n=37) ($p< 0.01$), acute pain 100% (n=2) ($p<0.01$), leg weakness 100% (n=2) ($p<0.01$), dizziness 100% (n=4) ($p<0.01$), knees buckled 100% (n=5) ($p<0.01$). Of the individuals who reported falls, the reasons were 45.83% (n=88) due to the bathroom being slippery when wet ($p <0.03$), even if they had adaptations in their home such as a toilet of adequate size 38.15% (n=145) ($p<0.04$) and grab bar in the bathroom in 47.91% (n=46) ($p<0.04$).
Conclusion: We found that the incidence of falls was due to the bathroom being slippery due to the wet floor and that most have adaptations in their homes due to the fear of falling. This makes us reflect that even with adaptations, it gives a false sense of security.
Implications: With the knowledge of environmental risk factors such as wet bathrooms, it is necessary to supervise the hygiene of these older adults.
Keywords: Falls, Older Adults, Environmental Factors

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics and Research Committee of the Hospital das Clínicas of the Faculty of Medicine of the University of São Paulo with opinion number 4.488.029 (CAAE - 38840720.4.0000.0068).

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ASSOCIATION BETWEEN SLEEP QUALITY AND MUSCULOSKELETAL PAIN IN HEALTH WORKERS — CROSS-SECTIONAL STUDY

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Background: Sleep is necessary for maintaining health and well-being. Work in the health area is organized in a shift system, which can interfere with workers' s circadian cycle, making them more susceptible to physical fatigue and musculoskeletal pain.
Objectives: To verify if there is an association between sleep quality and the number of regions with musculoskeletal pain in health workers linked to the Unified Health System (SUS).
Methods: A total of 125 health workers from different occupations who are part of the HEROES cohort were evaluated. Sleep quality was assessed by the Pittsburgh Sleep Quality Index (PSQI), considering the total score (ranging from zero to 21 points). The number of sites with musculoskeletal pain was assessed using the Nordic Musculoskeletal Symptoms Questionnaire (NMQ), ranging from zero to nine sites with pain. The factors age, gender, marital status, education, use of medication, tobacco, workplace, and hours worked were extracted from the sociodemographic questionnaire. Linear regression analysis was performed in the SPSS program with a significance level of 5%.
Results: The sample consisted of woman (83.2%), hospital workers (48.8) with a workload of more than 30 hours per week (71.2%). Linear regression analysis showed that sleep quality is associated with musculoskeletal pain (R^2= 24.04%; p= 0.000; CI= 1.05 — 2.90). With each increase of one point in the PQSI, there is an increase of 0.22 in the number of sites with musculoskeletal pain; that is, the worse the quality of sleep (bad sleepers), the greater the probability of the worker reporting musculoskeletal pain in more than one region.
Conclusion: Sleep quality was associated with the number of sites of pain in healthcare workers.
Implications: The findings of study show that it is necessary to return actions to care for the quality of sleep-in health workers, as well as to rethink the organization of health work, with a view to enabling shift alternation or other worker protection measures.
Keywords: Physiotherapy, Nursing, Ergonomics

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COMPARISON OF DIAGNOSTIC CRITERIA FOR SARCOPENIA IN OLDER PEOPLE: CROSS-SECTIONAL STUDY

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Background: Sarcopenia has been subject of study for some years, been defined by some international consensuses. A lack of pattern in ways to assess the syn-drome, with a great variability of methods and cutoff points, used to make harder the data compilation in systematic reviews, with meta-analyses, and even in the clinical practice.
Objective: to compare the methods for evaluating sarcopenia in older people, demonstrating the relationship of each test with its peers for the same criteria diagnostic.
Methods: Cross-sectional study, where older people were assessed for: muscle strength, by handgrip and isokinetic dynamometers; body composition, by BIA, skinfolds, mid-arm and calf circumferences; physical performance by six-minute walk test, TUG and SPPB. The qualitative variables were expressed in absolute and relative frequency, the quantitative were presented in mean+SD, median and IQR. The correlations were assessed by Spearman's Correlation Coefficient, accepted as low when $r>0,1$; moder-ate when $r>0,3$, and high when $r>0,5$. The p-value $<0,05$ was adopted as significant.
Results: 78.31% were women, the average age was 67,85 +5,27 years. In strength assessments was found moderate correlation between Handgrip and quadriceps PT, and high with hamstrings PT. PT assessments showed high relation between them. SMM showed a high correlation with FFM, and a low correlation with CC and MAC. FFM showed high correlation with all body composition assessments. In physical performance, UGS had moderate correlation with SPPB and high with TUG. TUG showed low correlation with SPPB. UGS.
Conclusion: For strength, handgrip showed the best correlation, even needing more prospective studies. The chair stand test did not show relationship with other techniques, and it may be because of

other variables than strength only, as balance and power output. For body composition, BIA showed the best correlations, as expected. Skinfold, calf circumference and MAC could be a good choice for this criterion, because they have good correlation, low cost, and are fast to develop. For physical performance, UGS seems to be the best assessment, although SPPB and TUG showed some correlations. Is important to note that, for these criteria, the choice of assessment method may affect the result of sarcopenia severity.
Implications: Studies like this used to clarify the use of certain assessment and diagnostic techniques. With this study, for this sample, we were able to demonstrate the power of comparability of the instruments available for the diagnosis of sarcopenia in older people, thus facilitating the clinical practice of health professionals.
Keywords: Sarcopenia, Aged, Geriatric Assessment, Anthropometry, Kinanthropometry

Conflict of interest: The authors no conflicts of interest.
Acknowledgment: Not applicable.
Ethics committee approval: This study is part of a project approved by the UFCSPA Research Ethics Committee, under registration number 3.335.461.

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EFFECT OF TWO PHYSICAL EXERCISE PROGRAMS ON STRENGTH, FUNCTIONALITY AND QUALITY OF LIFE IN OLDER PEOPLE: A RANDOMIZED CLINICAL TRIAL

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Background: The body of the elderly, in general, suffers impacts with the aging process, which may result in changes in the body as a whole, and exercise has been commonly used by health professionals as a form of intervention for the mitigation and prevention of changes in the aging process.
Objective: To compare the effect of two different exercise programs on strength, functionality, and quality of life in elderly people from Porto Alegre, Brazil
Method: This was a randomized, blinded, intent-to-treat clinical trial in which 31 elderly subjects participated, 16 in the strength training group (G1) and 15 in the Pilates solo training group (G2), with a duration of approximately 1 hour, and frequency of 3 times a week for 12 weeks, with evaluations every 4 weeks of training. To measure strength the handgrip test and the isokinetic dynamometer (Biodex) were used for knee flexion and extension strength. For functionality the TUG, SPPB, Berg and TC6 were evaluated and for quality of life the SF-36 questionnaire was used.
Results: Although the elderly gradually improved in the strength outcome, there was not statistically significant intragroup or intergroup difference. As for functionality, there was a statistically significant difference (p=0.010) in the predicted percentage of the 6-minute walk test between the groups in evaluation 4, where G1 walked 126.51±10.28% and G2 walked 112.11±5.99%. As for quality of life, despite the improvement in all domains, only in the Emotional Aspects domain there was a statistically significant difference (p=0.017), between groups G1 and G2 at Assessment 1 and Assessment 3, being respectively 72.92±32.70 and 55.56±41.25, and 77.78±28.87 and 100.00±0.0.
Conclusion: There was no significant difference in strength when comparing the groups. In functionality G1 presented a higher predicted percentage of the 6-minute walk test when compared to G2. In quality of life, in the domain of emotional aspect G2 was able to overcome G1 even though initially G1 had significantly higher values.
Implications: this work brings important knowledge to the literature, demonstrating the impact of each modality of physical activity on certain health indicators of the elderly individual. We also reiterate that further work, with larger samples and different training models, should be conducted to deepen these results.
Keywords: Aging, Resistance training, Exercise movement techniques, Functional capacity, Quality of life

Conflict of interest: The authors declare no conflicts of interest.
Acknowledgment: Not applicable.
Ethics committee approval: This study is part of a project approved by the UFCSPA Research Ethics Committee, under registration number 2.137.840/2017.

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NEUROMUSCULAR PERFORMANCE OF WOMEN WITH KNEE OSTEOARTHRITIS

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Background: Knee osteoarthritis (KOA) is characterized by progressive degeneration of cartilage and periarticular tissue, resulting in narrowing of the joint space, formation of osteophytes and sclerosis of the subchondral bone. Compromised ability to generate muscle torque and power has been the most predominant symptom of KOA and may be related to the difficulty in performing the main activities of daily living. The muscle strength deficit in KOA affects the entire lower limb, being more pronounced in the knee extensors, 40% lower in relation to healthy individuals of the same age group. Strength together with quadriceps muscle power may be clinically more important to identify functional deficits in these patients, providing more accurate information about the neuromuscular system in relation to imaging exams.
Objectives: The aim of the study was to compare peak torque and rate of torque development of knee extensors in women with and without knee KOA.
Methods: 71 women participated in this study, divided into a group with Knee Osteoarthritis (GOAJ; n= 39) and a control group (GC; n=32). For the GOAJ, the individuals had a radiological diagnosis of tibiofemoral OA and for the CG, the individuals did not have a history of alterations related to chronic-degenerative diseases in the lower limbs. To evaluate the knee extensor torque, the volunteers performed 3 maximum voluntary isometric contractions, for a period of 5 seconds, with an interval of 30 seconds between each contraction. Torque data were normalized by the volunteers' body mass. A load cell (Noraxon®), with a sampling frequency of 100 Hz, was coupled to the lever of the leg extension chair for the acquisition of joint torque data. Peak torque was determined by the highest torque value obtained after the onset of muscle contraction, and the average of the values of the three contractions performed was calculated. To calculate the torque development rate (TDT), the slope of the torque versus time curve was analyzed, in windows of 0-30 and 0-200ms. For statistical analysis, the T test for Independent Samples was used, considering the significance level of $p < 0.05$.
Results: The knee extensor torque of the GOAJ was 54% lower compared to the CG. Regarding DTT, there was a significant difference

both in the initial and late phase of muscle contraction, with GOAJ presenting values, respectively, 49% and 36% lower than the CG.
Conclusion: Women with KOA have neuromuscular impairment in relation to women in the same age group without the disease.
Implications: The neuromuscular variables analyzed show that women with KOA have a lower ability to produce force and generate rapid nerve impulses in a short period, which may predispose these individuals to falls and contribute to the worsening of functional mobility in this population.
Keywords: Knee osteoarthritis, Muscle strength, Torque development rate

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: This work was carried out with the support of the Coordination for the Improvement of Higher Education Personnel (CAPES).
Ethics committee approval: Work approved by the Ethics Committee of Universidade Estadual Paulista, Campus de Marília, opinion number 1.503.496/2015.

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BIOMECHANICAL AND VISCOELASTIC PROPERTIES OF HAMSTRINGS WITH AND WITHOUT POSTURAL DEMAND IN COMMUNITY-DWELLING OLDER WOMEN: A PILOT STUDY

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Background: Hamstrings act in hip extension, knee flexion, hip and knee rotation, as well as in simple stabilization of the pelvis and lumbar spine during movement. In older adults, these functions may be compromised due to age-related changes in both muscle structure and function. Thus, the biomechanical and viscoelastic properties could be altered due to the decrease in muscle fiber size, decrease in collagen content and increase in fibrosis. Associated with these aging-related changes, postural demands such as standing for prolonged periods or maintaining an upright posture, could further exacerbate these changes, leading to increased muscle stiffness and reduced elasticity. Therefore, it is possible that the biomechanical and viscoelastic properties of hamstrings are affected by postural demands, particularly in community-dwelling older adults.
Objectives: To evaluate and compare changes in the biomechanical and viscoelastic properties of hamstrings at rest and during the orthostatic position.
Methods: Descriptive analytical cross-sectional study. Individuals aged 60 years or older, without muscle tone alterations and without conditions affecting functional mobility, were evaluated. Individuals with cardiorespiratory, metabolic, or neurological health conditions without medical follow-up were also excluded. Initially, the individuals answered an evaluation form developed by the researchers. Next, the MyotonPro (Myoton AS, Estonia) was used to assess the passive stiffness, elasticity, relaxation, and creep of the biceps femoris (BF) and semitendinosus (SMT) muscles in prone position (PP) and in the orthostatic posture (OP). Mean values for the left lower limb (LLL) and right lower limb (RLL) were calculated from the values obtained in BF and SMT. Means and standard deviations were used to describe the data and, to compare the different situations between MIE and LID, the Wilcoxon test was used with a significance level of $p<0.05$.
Results: Seven female participants were evaluated, with a mean age of 65.57($\pm$4.68) years and a mean body mass index of 29.61kg/m^2($\pm$5.81). In RLL, the passive stiffness (PP=262.31N/m$\pm$38.71; OP=286.71N/m$\pm$71.58), elasticity (PP=1.85$\pm$0.16; OP=1.63$\pm$ 0.27), relaxation (PP=23.35ms$\pm$4.38; OP=20.71ms$\pm$4.95), and creep (PP=1.45$\pm$0.26; OP=1.29$\pm$0.30) showed a significant difference between groups. In the LLL, only the elasticity (PP=1.85$\pm$0.14; OP=1.59$\pm$0.29) showed a significant difference.
Conclusion: The findings of this study indicate that maintaining the orthostatic posture would imply an increase in stiffness and a reduction in elasticity, relaxation and creep of the hamstrings, in at least one of the lower limbs.
Implications: Understanding the biomechanical and viscoelastic properties of tissues in different postures can help design and optimize training and rehabilitation programs.
Keywords: Muscle stiffness, Postural control, Older adults

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THE ROLE OF THE PHYSIOTHERAPIST IN PRE-ADMISSION SCREENING, PERIODIC AND DISMISSAL ASSESSMENTS OF WORKERS: CROSS-SECTIONAL STUDY

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Background: A crucial occupational health physiotherapist's role is advising on a person's physical fitness for work. To do this, the physiotherapist working in occupational health uses tools to measure a person's physical and functional capacity and perform a series of assessments. Many physiotherapists use physical-functional measurements for this purpose. The physical-functional pre-employment evaluations aim to identify musculoskeletal injuries present in the worker or functional limitations of movements that prevent him from carrying out occupational activities, such as handling loads.
Objectives: Identify the profile of physiotherapists who perform physical-functional and complementary assessments, who work with occupational health.
Methods: This is a cross-sectional study through interviews (survey) with physiotherapists who work with physical-functional and complementary assessments in occupational health. Physiotherapists who carry out physical-functional evaluations in workers with the objective of assessment, periodic, or dismissal, were included. the recruitment and access to the questionnaire were through a "Contact Mode" survey and the link was sent through social networks and a banner in the development and pre-test questionnaire was prepared with the title and purpose of the research and types of questions, the administration of the survey carried out via the web, it was a voluntary survey, without incentives with collection from June to December 2022 with a questionnaire with 55 items and 12 pages.
Results: Of the 1210 guests with a professional profile in the occupational health field, 106 physiotherapists responded that they

evaluated workers according to the established inclusion criteria. The occupational profile characteristics of the participants prevailed the female gender being 70.8%, most qualified with specialization 69.8% and work in the area from 2 to 4 years 24.5%. 56.6% consider the use of the ICF in their evaluations, 45.3% use questionnaires to assess health and capacity, 35.8% usually request additional tests, 82.1% include evaluation of participation in work, 40.6% evaluate workers over 60 years old, 48.1% assess workers with physical or mental disabilities. They use sociodemographic information and anthropometric profiles in their evaluation forms, predominate use of pain assessment in workers on the Visual Analog Scale 76.4%. In the evaluation techniques and instruments used to measure a range of motion, a simple goniometer prevails in 58.5%. In the functional physical assessments, 72.6% use special functional tests, with the most evaluated elements being pain 98.1%, active range of motion 98.1%, edema 93.4%, tonus 88.7%, tropism 84.9%, scars 83.0%, gait and sensitivity 81.1%. The monitoring of workers is ordered weekly, monthly, quarterly, half-yearly, or annually. These assessments include admission, periodic change of function, removal or return to work, diagnosis of disability, establishing a causal link, and dismissals.
Conclusion: We identify that physiotherapists use other resources besides a musculoskeletal-based assessment to assess workers.
Implications: This study allows us to understand better how physiotherapists conduct their assessments and know some of the most used techniques and methods.
Keywords: Physical Evaluation, Occupational Health, Physiotherapist

Conflict of interest: The authors declare no conflict of interest.
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SOCIAL ASPECTS OF QUALITY OF LIFE IN INDIVIDUALS WITH VESTIBULAR DYSFUNCTION

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Background: Disorders of the vestibular system can cause inability to perform professional and social activities, in addition to causing physical and emotional problems. This disability caused by vestibular symptoms, whether related to emotional, functional, or physical aspects, is of great importance in the individual's social and personal context, regardless of its etiology, considerably affecting their quality of life. In the social context, individuals with symptoms arising from vestibular dysfunction such as dizziness and vertigo, avoid participating in family gatherings, visiting friends and neighbors due to fear of walking and leaving home, affecting their quality of life. The identification of social aspects in these individuals can help in choosing the most appropriate therapy. However, the investigation of social aspects of quality of life is little explored in individuals with vestibular dysfunction.
Objectives: Investigate the social aspects of quality of life in individuals with vestibular dysfunction.
Methods: This is a pilot cross-sectional study with a quantitative approach. For descriptive statistics, Jamovi version 2.3.25 was used. Inclusion criteria are age ≥18 years; both genders; complaining of dizziness or vertigo for at least 3 months; medical diagnosis of vestibular dysfunction. Exclusion criteria are lower limb amputation; ataxia; low vision or blindness; locomotion aided by devices such as a wheelchair, canes, or crutches; dizziness or vertigo that is not vestibular in origin; psychiatric disorders in crisis; underwent vestibular rehabilitation in the last 6 months; presence of chronic orthopedic disease; refusal to sign the Free and Informed Consent Form. For evaluation, a specific form for sociodemographic data and the Medical Outcomes Study 36 - Item Short Form Health Survey (SF 36) questionnaire was used, using only the score (0-100) of the "social aspects" domain, which considers the family relationship, relationship with friends or groups as a social aspect.
Results: Of the five individuals evaluated, 3 were women and 2 men, the age group had an average of 46.4 with a standard deviation of 20 years, 3 had completed higher education, 2 had completed high school, as a work activity 2 were maids, 1 civil engineer, 1 systems developer, 1 physiotherapist. Of the sample analyzed, 3 had a score of 25 points and 2 had a score of 63 points. Considering this score, most individuals had a poor social aspect, a quarter of what is considered excellent for the evaluated domain (social aspect).
Conclusion: We identified low scores in the social aspects of quality of life in individuals with vestibular dysfunction. New research whose social aspects are analyzed as a primary outcome should be encouraged.
Implications: This study suggests that people with vestibular dysfunction may have low scores on social aspects of quality of life. This research can contribute to physical therapy practice, as it highlights a relevant aspect in the functionality and health of people with vestibular dysfunction.
Keywords: Socialization, Vestibular system, Quality of life

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PSYCHOBEHAVIORAL FACTORS AND LIFESTYLE OF BRAZILIAN MIDDLE-AGED AND ELDERLY ADULTS ARE ASSOCIATED WITH PAIN

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Background: Pain is one of the main reasons for seeking health services, and its prevalence is higher among adults and older people. In addition to generating high health costs, the presence of pain leads to a decrease in these individuals' quality of life and functionality. Understanding the factors associated with pain during aging is essential for effective prevention and treatment. Studies that explore these associations among older people are still scarce and need a sample size representative of the Brazilian population.
Objectives: Analyze the association between pain, psychobehavioral, and lifestyle factors in middle-aged adults (+50) and elderly Brazilians.

Methods: This cross-sectional study was based on information from the second phase of the Longitudinal Study of Brazilian Aging (ELSI-Brasil), conducted from 2019 to 2021. Brazilian individuals aged 50 years or older were included and completed a questionnaire about their physical and mental health and social status. The question "Do you have pain that often bothers you?" (Yes/No) was used to assess pain status. Association analysis between pain, psychobehavioral (feeling nervous or irritated, depressed, sad, happy, and having a confirmed diagnosis of depression or any other psychiatric diagnosis), and lifestyle (smoking, drinking, and regular physical activity) were conducted.
Results: A total of 9875 participants completed the questionnaire. Participants ranged from 50 to 109 years, 5855 were female, and 328 (64%) participants reported no pain. Pain was associated with the female sex ($p < 0.01$), sedentary lifestyle or irregular practice of physical activity ($p < 0.01$), feeling nervous or irritated ($p < 0.01$), feeling depressed ($p < 0.01$), feeling sad ($p < 0.01$) or not feeling happy ($p < 0.01$), having a diagnosis of depression ($p < 0.01$) or some other psychiatric problem ($p < 0.01$), alcoholism ($p < 0.01$), 01) and smoking ($p < 0.01$). Participants' age was not associated with pain (p=0.59), not even when analyzed by age group (p=0.17).
Conclusion: Psychobehavioral factors are strongly associated with the population aging process of Brazilians, as well as alcoholism and smoking. The same does not occur for age and age group of this population.
Implications: The results show a significant association of psychobehavioral factors with pain in older Brazilian adults. These data contribute to preventing and treating future health problems in this population, given that we now know the factors associated with this phenomenon.
Keywords: Pain, Mental Health, Aging

Conflict of interest: The authors declare no conflict of interest.

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CONCURRENT VALIDITY OF THE TRANSLATED VERSION OF THE INFANT MOTOR PROFILE AND THE ALBERTA INFANT MOTOR SCALE IN BRAZILIAN INFANTS

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Background: The Infant Motor Profile (IMP) is a novel instrument used to assess the motor behavior of infants between three and 18 months of age or until they acquire independent walking by three months. The instrument provides qualitative and quantitative information about motor development through the domains: of variation (size of movement repertoire), adaptability (ability to select specific motor strategies for the required task), symmetry (presence of asymmetries of body segments during voluntary activities), fluency (execution of movements in a smooth, elegant and effortless way when carrying out voluntary activities), performance (or motor performance, corresponds to the number of motor skills that the infant was able to perform) and the total score (sum of all previous scores). In this way, the IMP offers essential information for clinical practice not provided by another neuromotor assessment instrument. Additionally, the IMP is an easy, quick-use, and affordable instrument for health professionals with validated and reliable psychometric properties. Due to its clinical relevance, it was recently translated into Brazilian Portuguese.
Objectives: This study aims to verify the concurrent validity of the translated Brazilian Portuguese version of the IMP with the Alberta Infant Motor Scale (AIMS) in Brazilian infants.
Methods: Participated in this study 24 infants at four months old (4.27 ± 0.5, 58.33% male) and 24 infants at six months old (6.33 ± 0.04, 58.33% male). The motor development was assessed using the translated Brazilian Portuguese version of the IMP and AIMS. Parametric and non-parametric statistics tests were performed.
Results: At four months old, AIMS correlated moderately (rho=0.529, p=0.008) with IMP total score, fairly with variation (rho=0.478, p=0.018) and performance (rho=0.468, p=0.021) domains of IMP. At six months old, AIMS correlated fairly (r=0.490, p=0.015) with IMP total score and moderately (r=0.727, p=0.000) with the performance domain of the IMP.
Conclusion: The present study confirms the concurrent validity of the translated Brazilian Portuguese version of the IMP with the AIMS. The correlation was higher for the performance domain, even though it was not Strong, which is justified by the fact that the IMP still evaluates other characteristics, e.g., fine motor skills.
Implications: The IMP-translated version to Brazilian Portuguese remains the psychometric properties of the original English version. Therefore, we strongly advise Brazilian health professionals to use the translated version when assessing infant's and children's motor behavior. The IMP will allow early detection and intervention individualized tailored to the infant's needs.
Keywords: Concurrent validity, Motor development, Infant Motor Profile

Conflict of interest: The authors declare no conflict of interest.

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KNOWLEDGE OF BRAZILIAN PREGNANT WOMEN ABOUT THE PHYSICAL THERAPY PERFORMANCE IN OBSTETRICS

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Background: Obstetrics physiotherapy is an expanding area that seeks the promotion and rehabilitation of physical and emotional

health from the beginning of the gestational period to the postpartum. The obstetric physiotherapist acts by guiding and preparing the woman to perceive and understand her responsibility in the process through specific guidelines and training ranging from regular physical activity to specific preparation for vaginal childbirth. Among the methods can be cited muscle training of the pelvic floor (TMAP), perineal massage and EPI-NO® training.
Objective: To evaluate the knowledge of pregnant women about physical therapy performance in the preparation of women for labor.
Methods: It is characterized as an exploratory, transverse, quantitative research, based on the application of an online questionnaire composed of 23 questions, two of numerical filling and the rest of the multiple choice elaborated in order to evaluate the degree of knowledge Pregnant women about the physiology of vaginal delivery, their rights at this time and about the performance of physical therapy in the gestational period and childbirth. Pregnant women over 18 years old were included with internet access. A questionnaire composed of 23 questions was prepared, with the objective of evaluating the degree of knowledge of pregnant women regarding the physiology of vaginal childbirth, their rights at this time and about the performance of physiotherapy in the gestational period and childbirth.
Results: The responses of 285 pregnant women (29.7 ± 5.4 years; 25.8 ± 10.5 weeks gestational) were analyzed. Of these, 69.5% (n = 198) declared to be aware of physiotherapeutic intervention for pelvic floor muscles and 95.1% (n = 271) said this preparation can help during labor. On the other hand, 43.9% (n = 125) declared the absence of knowledge about the physiotherapist's performance during labor. Among the research participants were observed a greater preference for vaginal delivery (77.9%) compared to caesarean section (22.1%). The most specific preparation techniques for vaginal childbirth, perineal massage and epi-nodes represent the largest percentage of pregnant women who opted for a natural delivery, 42.9% and 56.3%. When the answers were stratified by the preference of delivery, less knowledge was observed about the techniques for perineal preparation for childbirth and physical therapy performance during labor in those who declared a preference for cesarean section.
Conclusion: It is concluded that there is ignorance of part of pregnant women regarding the performance of the physiotherapist during the gestational period and childbirth, and that this ignorance is superior to those with a preference for caesarean section. In addition, it is important to emphasize that the information should not be passed only through the physical therapist, but from the entire health team.
Implications: This directly implies the provision of information for this audience that seems to be lacking in information on the subject. It is of paramount importance to expand the dissemination of the performance of the physiotherapist during prenatal care, childbirth, especially among women with a preference for caesarean section, as the possibility of physiotherapeutic intervention can change the choice of childbirth.
Keywords: Childbirth, Obstetrics, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgments: To the Coordination for the Improvement of Higher Education Personnel (CAPES).
Ethics committee approval: Ethics Committee for Research on Human Beings of the Federal University of Uberlândia (n. 2,821,792).

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PREVALENCE OF URINARY INCONTINENCE SYMPTOMS IN WOMEN IN THE CLEANING TEAM OF A HIGHER EDUCATION INSTITUTION

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Background: According to the International Continence Society (ICS), urinary incontinence (UI) is understood as any involuntary loss of urine through the urethra. It is a public health problem of multifactorial origin, which affects the world population, of all ages, regardless of socioeconomic and cultural situation. UI affects both sexes, but is more prevalent in females, affecting up to 50% of this population at any stage of life, impacting quality of life.
Objectives: to analyze the prevalence of symptoms associated with urinary incontinence in women from the cleaning team at Centro Universitário Dr. Lion Sampaio.
Methods: Observational cross-sectional study with descriptive analysis. Data were obtained through the Brazilian version of the International Consultation on Incontinence Questionnaire – Short Form (ICIQ-SF) and the International Consultation on Incontinence Questionnaire Overactive Bladder (ICIQ-OAB), tabulated in the EXCEL statistical program and analyzed using descriptive statistics: absolute frequency, relative frequency, minimum and maximum values, mean and standard deviation.
Results: 12 women with an average age of 39.5 years participated in the study. There was a prevalence of UI symptoms of 16.6% in the women participating in the study, and the prevalence of stress urinary incontinence was 16.6% in these women, who reported urinary loss once a week or less, usually occurring on coughing and/or sneezing efforts. Of the volunteers participating in the research, 91.6% had some symptom related to an overactive bladder.
Conclusion: It was possible to observe the presence of symptoms of involuntary loss of urine, with characteristic symptoms of stress urinary incontinence among the women participating in the research. It was found that some of these women also had symptoms related to overactive bladder, and that symptoms related to UI and OAB negatively impact the quality of life of these women.
Implications: The lack of knowledge on the part of women about the symptoms of UI and OAB, as well as the role of physiotherapy in women's health, directly affects the quality of life of these women, impacting their social relationships.
Keywords: Urinary Incontinence, Overactive Bladder, Women's Health

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CORRELATION BETWEEN DYSMENORRHEA AND ANAL INCONTINENCE IN YOUNG NULLIPAROUS WOMEN

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Background: Dysmenorrhea is one of the most frequent gynecological conditions, characterized by colicky pain that affects the lower abdomen. Many systems can be affected during the menstrual period. It is known that the different phases of the menstrual cycle influence the motility of the small and large intestine, even evolving with a delay in the intestinal transit time.
Objectives: To correlate the symptom of dysmenorrhea with the function of anal continence in young nulliparous women.
Methods: A descriptive, observational, cross-sectional study was carried out with a convenience sample of young nulliparous women. Women aged between 18 and 30 years who had never been pregnant were selected. The participants were evaluated by the same examiner using the socio-clinical questionnaire, visual analogue pain scale (VAS), Bristol scale and Jorge & Wexner fecal incontinence scale (domains: solid stools, liquid stools, flatus, use of protector, lifestyle change). Data were analyzed according to the distribution of normality of the sample and presented as means and standard deviation of the variables and compared the groups with and without dysmenorrhea as a function of fecal continence using the t-test for independent samples. Data were analyzed using the Statistical Program for Social Sciences (version 23) considering a significance level of 5%.
Results: Participated in this study 69 nulliparous young adult women with a mean age of 21.86 $\pm$ 3.16 years. Dysmenorrhea had a prevalence of 65.21% (n=45) and the majority had regular menstrual flow. The level of pain from dysmenorrhea was low, with a mean VAS of 3.59 $\pm$ 3.16 points. Most of the sample reported normal bowel function with a defecation pattern between 5 and 7 times a week, without the need to use medication to defecate. The appearance of the stools also denoted a normal evacuation, with the majority being classified as 3 by the Bristol scale. By analysis the domains of the Jorge & Wexner incontinence scale, it was verified that the majority of the sample did not have anal incontinence. In the comparison between the groups with and without dysmenorrhea, there was no statistically significant difference for anal incontinence, however the group with dysmenorrhea had higher values for anal incontinence. There was also no correlation between the presence of dysmenorrhea and the domains of anal incontinence.
Conclusion: Dysmenorrhea is prevalent among young nulliparous women. Intestinal functioning presented good performance. Dysmenorrhea did not interfere with the anal continence of the sample studied, however clinically a worsening of anal incontinence was observed in the group with dysmenorrhea.
Implications: In scientific terms, it is known that dysmenorrhea influences intestinal functioning, but also that, although there was no statistical significance, if the sample is increased, it can probably be shown that dysmenorrhea interferes with anal continence. In clinical terms, this study is relevant because it presents the importance of evaluation dysmenorrhea and anal continence in young nulliparous women, considering that both conditions are common in the population.
Keywords: Women's health, Dysmenorrhea, Fecal Incontinence

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PREVALENCE OF MENTAL HEALTH CONDITIONS IN EDUCATION WORKERS DURING THE COVID-19 PANDEMIC — LONGITUDINAL STUDY

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Background: Education was one of the sectors most affected by the pandemic due to the emergency suspension of face-to-face activities. The educational sector had to adapt quickly to remote teaching, in conditions that are not always favorable in terms of resources to carry out classes, work overload, and excessive use of screens. Therefore, feelings of anguish, anxiety and stress were frequent, mainly due to sudden and radical changes in daily life and uncertainty about the duration of this period. In addition, fear, alarm, stress, and depression were also common in the period. Thus, education professionals may have shown an increase in the prevalence of mental health problems, because of difficulties related to work during the pandemic.
Objectives: To identify the prevalence of diagnosed mental health conditions in workers in the education sector during the COVID-19 pandemic through quarterly assessments over 12 months.
Methods: Longitudinal study, derived from the IMPPAC cohort. Education workers who participated in the baseline (June 2020 to September 2020) and quarterly follow-ups for 12 months were included, using an electronic form with sociodemographic, occupational, and medical diagnoses questions.
Results: 450 education workers participated in the baseline; being 63.6% female; 71.4% white; 35.8% in the 30 to 39 age group; 62.7% married; 95.8% with a university degree; 66.8% with income greater than six minimum wages; 31.1% with working time greater than 16 years; 44% had increased workload during the pandemic; 97.1% in home office; 52.9% had children at home; 18.7% were contaminated at some point by COVID-19 until the second year of the pandemic; 52% did not use medication, and of those who did, 25% used two or more medications. Anxiety was the health condition with the highest increase in cases: 8.0% (3rd month of the pandemic); 9.8% (6th month); 12.0% (9th month) and 23.8% (12th month of the pandemic). In sequence, burnout with 0.4% (3rd month); 0.8% (6th/9th month) and 14.3% (12th month). Insomnia diagnoses had a prevalence of 1.1% (3rd/6th month); 1.2% (9th month) and 11.9% (12th month of the pandemic). Finally, the diagnosis of depression had a prevalence of 5.5% (3rd month); 4.9% (6th month); 4.3% (9th month) and 7.1% (12th month).
Conclusion: Anxiety, burnout, insomnia and depression were the most prevalent mental diagnoses and had a significant increase after 12 months of follow-up among education workers, especially between the 9th and 12th months of follow-up.
Implications: As a result of the COVID-19 pandemic, working conditions in the education sector are tolerant, causing a scenario of shocks. Our results support the need to care for workers' mental health, especially in relation to anxiety, burnout, insomnia and depression.
Keywords: COVID-19, Mental health, Occupational Health

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VALENCE AND HARM-BELIEF OF MOVEMENTS IMAGES IN PEOPLE WITH SHOULDER PAIN

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Background: The neuronal circuits responsible for processing pain and emotion are functionally shared. Emotional patterns can be understood by the defensive motivational state, characterized by low valence (unpleasant), and by the appetitive state characterized by high valence (pleasant). Furthermore, people with shoulder pain understand their own pain from the biomechanical perspective, in which they believe that movement can cause tissue damage.
Objectives: We aimed verify if there is an association between hedonic valence, harm-belief of shoulder movement and shoulder pain and disability index.
Methods: This is a cross-sectional observational study. We included people with different shoulder musculoskeletal disorders, shoulder pain for at least three months, average intensity of at least 3 on the Numerical Pain Scale (NPS) and over eighteen years old. We excluded people with difficulties in understanding the questionnaires, the presence of a tumor and visual. The Shoulder Pain and Disability Index (SPADI) was applied to assess the shoulder pain and disability index. Participants viewed 58 movements images involving the shoulder complex. They judged valence using the Self-Assessment Manikin (SAM) scale for each image. The scale is composed of drawings of mannequins with expressions ranging from sad/unhappy (1) to pleasant/happy (9). The participants made an "x" on the manikin that represented their emotion right after viewing the image. The following question was asked for each image to assess the harm-belief "How much do you believe that this activity could harm your shoulder?". The answers were made with an "x" on a numerical scale. A score of 0 represents not at all harmful and 10 represents very harmful. Multiple Linear Regression was performed using the hierarchical method to verify the association between harm-belief and SPADI (independent variables) and valence (dependent variable). The necessary assumptions for this analysis were evaluated and we considered 20 participants for each independent variable.
Results: Participated 42 people with chronic shoulder pain. The mean and standard deviation (SD) of age were 45.7(13). The SPADI mean and SD were 57.1(24.1). Multiple linear regression analysis resulted in a significant model [$F(2.39)=12.971; p<0.001; R^2=0.369$]. The harm-belief was negatively associated with valence (β=-0.832; t=-4.670;$p<0.001$). The pain and disability index was not associated with valence (β=0.344;t=1.934;p=0.06).
Conclusion: There is an association between valence and harm-belief of movements images. People with shoulder pain who find movements images unpleasant may believe that movement can harm shoulder pain. Harm-belief associated with a negative emotional state can lead to exacerbated fear of movement and, consequently, avoidance behavior.
Implications: We present the association of emotional aspects and harm-belief of movement in people with shoulder pain. It is crucial for the clinician to understand these aspects in order to improve patient treatment. In this way, providing improvement in pain, function and breaking the fear-avoidance cycle of movement.
Keywords: Shoulder pain, Emotion, fear-avoidance

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IS FUNCTIONAL STATUS CORRELATED WITH QUALITY OF LIFE IN INDIVIDUALS WITH AMYOTROPHIC LATERAL SCLEROSIS?

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Background: Amyotrophic Lateral Sclerosis (ALS) is a rare, rapidly progressive, and fatal neurodegenerative disease. As the disease progresses, there is a decline in functional status, increased dependence, and limitation, which can have a considerable impact on the quality of life of these individuals.
Objectives: To investigate the correlation between functional status and quality of life in individuals with ALS.
Methods: Exploratory cross-sectional study. The study included individuals diagnosed with ALS, following the Awaji criteria, aged 18 years or older, followed by a Neuromuscular Disease Center. Individuals diagnosed with other neurological disorder or who showed signs and symptoms of cognitive alterations could not participate. Functional status and quality of life were measured by Functional Rating Scale-Revised (ALSFRS-R) and ALS Assessment Questionnaire (ALSAQ-40), respectively. To investigate the correlation between the two variables, Pearson's correlation and linear regression were used, considering a significance level of 5%. Statistical tests were performed using SPSS program.
Results: Eighty-four individuals participated in the study with mean age of 56.6 (SD 11.4) years and a median of 1.0 year of diagnosis. Most participants had ALS of appendicular onset (82.1%) and had both appendicular and bulbar involvement (91.7%). The mean ALSAQ-40 score was 265.2 (SD 111.9) and the mean ALSFRS-R score was 30.1 (SD 10.5). There was a strong correlation between functional status and quality of life (r= -0.826; p=0.000). When evaluating the correlation between the domains of ALSFRS-R and quality of life, a strong correlation was found with bulbar domain (r=-0.756; p=0.000), moderate with motor (r=-0.677; p=0.000) and weak with respiratory function (r=-0.214; p=0.050). The ALSFRS-R score explained 82.6% of the variation in the scores of ALSAQ-40 (R^2=0,826; p=0,000).
Conclusion: Functional status is correlated with quality of life in individuals with ALS. Therefore, it is essential to considerer the

relationship between functional status and quality of life when monitoring this population.
Implications: Future studies should investigate strategies for maintaining functional status for as long as possible and whether they are able to improve the quality of life of individuals with ALS.
Keywords: Amyotrophic Lateral Sclerosis, Quality of life, Rehabilitation

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ARE QUALITY OF LIFE, WALKING CAPACITY AND FUCTIONAL STATUS DIFFERENT IN INDIVIDUALS AFTER WAKE-UP STROKE AND NON-WAKE-UP STROKE?

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Background: Stroke is defined as a clinical syndrome resulting from reduced blood flow to brain structures, with development of focal and global signs of brain deficit, with no apparent cause other than vascular. Stroke can be classified as ischemic or hemorrhagic, with the first one being more prevalent. Wake-up Stroke is a type of ischemic stroke, in which the first stroke symptoms are noticed right after waking up. Studies indicate that Wake-up Stroke may be related to obstructive sleep apnea, the most prevalent sleep disorder in post-stroke individuals and worse post-stroke outcomes.
Objectives: To investigate differences between post-stroke groups in the chronic stage that had or did not have Wake-up Stroke in relation to quality of life, walking capacity and functional status.
Methods: Exploratory cross-sectional study. Inclusion criteria were individuals aged 20 or over, diagnosis of ischemic stroke, post-stroke time greater or equal to 6 months, ability to walk independently and absence of cognitive alterations. The stroke was classified as a Wake-up Stroke if the first signs of the stroke were noticed shortly after awakening. The dependent variables were quality of life, walking capacity and functional status, measured by EuroQol, Six-Minute Walk Test and Modified Ranking Scale respectively. The independent t test was used to compare the Wake-up Stroke and non-Wake-up Stroke groups, considering a significance level of 5%. Statistical tests were performed using SPSS program (version 19.0).
Results: The study included 52 individuals with a mean age of 61 years and mean duration of 53 months. 13 (25%) individuals had a stroke classified as Wake-up Stroke. Most of the participants were male (55.8%), did not practice regular physical exercise (80.8%), had systemic arterial hypertension (80.8%) and were classified as intermediate or high risk for obstructive sleep apnea (82.7%). The analysis showed that there was no significant difference between groups regarding quality of life ($p<0.576$), walking ability ($p<0.815$) and functional status ($P<0.645$).
Conclusion: There was no difference between the groups that had or did not have Wake-up Stroke in terms of quality of life, walking ability and functional status. However, it is important to consider that 25% of the sample showed the first signs of stroke upon awaking and that more than 80% of the individuals were classified as intermediate or high risk for obstructive sleep apnea. Therefore, further studies are needed for a better understanding of Wake-up Stroke and its relationship with the rehabilitation process and sleep disorders.
Implications: Longitudinal studies with larger samples are still needed to confirm the findings of the present study, as well as to investigate the relationship between Wake-up Stroke and other important post-stroke outcomes.
Keywords: Isquemic Stroke, Wake-up Stroke, Rehabilitation

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ASSESSMENT OF HANDGRIP STRENGTH IN ELDERLY PATIENTS UNDERGOING HEMODIALYSIS: AGREEMENT AMONG DIFFERENT STANDARDS

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Background: The reduction in handgrip strength is a predictor of increased length of hospital stay, functional limitation, reduced quality of life and mortality.
Objectives: to evaluate the agreement between the three reference standards for handgrip strength in elderly patients with chronic kidney disease undergoing hemodialysis.
Methods: Cross-sectional and analytical study, with participants of both gender, over 18 years of age, on hemodialysis for more than three months in the nephrology unit of the Hospital Regional de Taguatinga, between June 2019 and April 2019. Data on dialysis time, presence of diabetes, hypertension and cause of kidney disease were obtained through Trackcare® electronic records. Handgrip strength was measured on the dominant limb or contralateral to the presence of arteriovenous fistula using a Jamar® hydraulic dynamometer. The three reference standards used for the diagnosis of low handgrip strength were: 1) European Working Group on Sarcopenia in Older People (EWGSOP 2019) considering cutoff points for men $<$ 27 kgf and for women $<$ 16 kgf; 2) Reference standard for the american population according to the study by Wang et al. (2018), considering low handgrip strength, percentile values lower than 10, according to gender and age; 3) Reference standard for the Brazilian population according to the study by Schlussel et al. (2008), also considering low handgrip strength values lower than 10, according to gender and age. The statistical program Statistical Package for the Social Sciences (SPSS) version 26.0 used for statistical analyses. The Kolmogorov Smirnov test was used to assess the normality of the variables. For agreement analysis, the kappa coefficient was used. The statistical significance considered was $p<0.05$.
Results: The sample consisted of 112 participants, mean age 68.45 ± 6.52 years old, dialysis time 22.39 ± 46.45 months, 67.00% (n=75) men, 33.00% (n=37) women. The most common cause of kidney disease was diabetic nephropathy in 45.53% (n=51) subjects. The body mass index of all participants ranged from 15.34 to 37.40 kg/m^2. The diagnosis of reduced handgrip strength in the sample, according to EWGSOP (2019), Wang et al. (2018) and Schlussel et al. (2008) was 66.10%, 37.50% e 63.40%, respectively. The reference standard by Wang et al. (2018) and Schlussel et al. (2008) showed

moderate agreement ($\kappa = 0.448$, $p<0.001$). The concordance between EWGSOP (2019) and Wang et al. (2018) was also moderate ($\kappa = 0.471$, $p<0.001$). Between EWGSOP (2019) and the study by Schlussel et al. (2008) substantial agreement was observed ($\kappa = 0.785$, $p<0.001$).
Conclusion: EWGSOP (2019) and Schlussel et al. (2008) showed good agreement for diagnosing reduced handgrip strength in elderly patients undergoing hemodialysis.
Implications: the reduction in handgrip strength has a negative impact on elderly patients with chronic kidney disease. It's a tool not influenced by volume changes and is necessary to diagnose sarcopenia in this population.
Keywords: Renal dialysis, Renal insufficiency, Muscle strength

Conflict of interest: The authors declare no conflict of interest.
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CARDIORESPIRATORY RESPONSE IN POST-COVID VOLUNTEERS ACCORDING TO THE VENTILATORY SUPPORT RECEIVED IN THE ACUTE PHASE: CROSS-SECTIONAL STUDY

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Background: The assessment of functional capacity in volunteers with post-covid syndrome has become an important issue to estimate functional consequences, disability and physiological responses to exercise. Our hypothesis is that patients show different cardiorespiratory responses to the 1-minute sit and stand test (1STS) according to the ventilatory support received in the acute phase of the disease.
Objectives: To compare the initial cardiorespiratory responses by 1STS of patients from the "Post-covid life" study according to the ventilatory support received in the acute phase of the disease.
Methods: Cross-sectional observational study with post-covid volunteers with different severities of both sexes, adults, recruited between June 2020 to October 2022 to a Physiology Laboratory of UnB. For comparison the volunteers were divided into 3 groups according to the respiratory support received in the acute phase, being: no respiratory support (SSR), oxygen therapy (O2) and mechanical ventilation (MV). They were evaluated by 1STS according to the pre-established protocol, including recording heart rate, perception of effort before and after the test and number of repetitions performed. Statistical analyses were performed using the Statistical Package For The Social Sciences (SPSS), version 20. The Kolmogorov Smirnov test was used to evaluate the normality of the variables. The ANOVA test for unrepeated measures and the Kruskal Wallis test were used for intergroup comparisons, considering $p<0.05$ statistically significant. Registration number: NCT04595097.
Results: We included 75 participants, 56% female, mean age 53.3± 11.6 years, BMI 31.2±6.1 kg/m^2, hospitalization 20.1±17.8 days, 74% sedentary and 18% previously active. The number of repetitions was 21.3±9.4, 19.5±5.9 and 21.6±7.4 for SSR, O2 and MV groups respectively. The volunteers had a mean HR pre of 79.5± 11.0, 83.3± 12.6 and post of 85.6± 14.6, 92.2± 16.0, 101.3± 16.4 and 105.2± 18.7 beats for the SSR, O2 and MV groups. The pre-BORG of the SSR, O2, and MV groups were 9.1± 2.8, 9.7± 2.8, and 8.3± 8.0, and post 12.1± 3.3, 14.2± 2.6, and 13.0± 2.7. Although the number of repetitions showed no difference between groups ($p>0.05$), HR and BORG were higher in the MV group compared to the others ($p<0.005$).
Conclusion: Although the number of repetitions obtained by 1STS did not vary according to the ventilatory support received in the acute phase of COVID 19, the cardiorespiratory adjustments were greater in the volunteers submitted to MV compared to those who used O2 and SSR, suggesting greater deconditioning.
Implications: The results suggest that 1STS with HR monitoring and BORG is a functional test capable of assessing cardiorespiratory adjustments in post-covid patients.
Keywords: Physical exercise, COVID-19, Rehabilitation

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: The present study was approved by the ethics in research council of the institution Universidade de Brasília Faculdade de Ceilândia and is registered under number CAAE: 35706720.4.0000.8093.

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PROFILE OF HOSPITALIZED ELDERLY PEOPLE: CARDIAC AUTONOMIC CONTROL, FUNCTIONAL CAPACITY, PERIPHERAL MUSCLE STRENGTH, INDEPENDENCE, AND MORTALITY

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Background: Population aging is accompanied by multimorbidities and several systemic changes, such as cardiovascular, functional and strength, which can result in recurrent hospitalizations. In it, functional alterations of pre-existing strength and independence are potentiated, increasing dependence, loss of function and prolonged hospitalization. Identify the profile of the elderly in terms of these variables allows directing effective interventions in search of major complications.
Objectives: To evaluate cardiac autonomic control, functional capacity, peripheral muscle strength and independence for activities of daily living (ADL), and the relationship between these variables and the risk of mortality in hospitalized elderly.
Methods: Observational, cross-sectional study carried out in a university hospital. Elderly >60 years old, with preserved cognition and hemodynamically stable, were included. Lowered level of consciousness, acute respiratory failure, unstable vital signs, dyspnea on minimal exertion and sepsis were exclusion criteria. The Charlson Comorbidity Index was applied, and the following evaluations were performed: records of the R-R intervals for analysis of heart rate

variability (HRV), Barthel index, handgrip strength (HGS) and the 5-time sit-to-stand test (STS5) (patients eligible for execution). Statistical analysis: Using the SPSS software, the Shapiro-Wilk, Wilcoxon and Spearman correlation tests were applied. Values presented as mean, standard deviation and $p \leq 0.05$.
Results: 20 elderly with a mean age of 70.4 ± 7.17 years (12 men (60%) and 8 women (40%)) participated until the moment of the study. The HRV indices showed no significant change in the change between the supine and sitting position (SDNN p=0.65; RMSSD p=0.57; PNN50 p=0.39; LF p=0.14; HF p=0, 15 and LF/HF p=0.19). The average Charlson score was 5.65 ± 2.90. Reduced HGS values were found in the dominant limb (24.22 ± 9.45 Kgf; 75.78% of predicted), STS5 (19.04 ± 6.10s; 57.93% of predicted) and Barthel (63.25 ± 29.57). The RMSSD index showed a negative correlation with the STS5 (rs=-0.90, p=0.03) and the Barthel index showed a positive correlation with the FPP (rs=0.62, p=0.01).
Conclusion: Hospitalized elderly did not show changes in HRV indices after postural change, which may indicate an altered autonomic response in this population. In addition, they showed a reduction in peripheral muscle strength and functional performance, and a moderate risk of mortality at one year. Higher RMSSD index values correlated with lower execution times in the STS5, as well as higher FPP correlated with lower dependency. We suggest that new studies like this one be carried out, characterizing, and correlating these variables with frailty and sarcopenia.
Implications: Given these results, even though the sample is small and partial, it is imperative to evaluate these variables at the time of hospitalization of the elderly, to guide multidisciplinary teams in decision-making for intervention and prevention of greater functional and strength losses in this population.
Keywords: Elderly, Cardiac autonomic control, Functionality

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Research Ethics Committee of the Federal University of São Carlos (UFSCar) - Ethics committee number: 5,701,000

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THE EFFECTIVENESS OF AN EXERCISE PROGRAM TO IMPROVE POSTURAL BALANCE IN INDEPENDENT ELDERLY PEOPLE: A RANDOMISED TRIAL

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Background: Aging is accompanied by systemic changes that compromise mobility, muscle strength and postural balance. Therefore, elderly individuals are more susceptible to episodes of falls. In Brazil, the number of hospitalizations and deaths from falls from standing heights has grown dramatically among the elderly population. Several studies have shown the importance of balance and muscle strength training to reduce the risk of falls among the elderly. However, little is discussed about the progression of the level of difficulty in a systematic way in the execution of balance exercises during the execution of these programs.
Objectives: (i) to propose an exercise program with progressions of difficulty for balance exercises; (ii) to investigate the effectiveness of the program to improve postural balance and reduce the risk of falls in independent elderly people.
Methods: this is a randomized clinical trial, carried out with elderly 60 years of age or older, residents of the city of Rio de Janeiro. Twenty-two participants were randomized to one of two treatment groups: intervention and control. The intervention group underwent an exercise program for static and dynamic balance with systematic progression of difficulty (dual-task exercises, manual resistance, and modification of sensory inputs) and exercises for muscle strengthening of the lower limbs. The control group performed the same exercise program, except for difficulty progressions. There were 2 sessions per week, for 12 weeks, lasting one hour each. The participants' risk of falls, functional mobility and gait adaptability were assessed before and after the intervention using the following instruments: Berg Balance Scale, Four Stage Balance Test, Timed Up and Go Test and Modified Dynamic Gait Index. The analysis of the data distribution profile (still to be carried out) will be verified using the Shapiro-Wilk test and, depending on the result, appropriate descriptive and inferential statistical analysis will be used. The effect size will be estimated according to the analysis used.
Results: the present study is in the data analysis phase. A total of 19 participants completed the exercise program (Control N=10; Intervention N=9), including 12 women. All 19 participants completed the 24 sessions without serious complications or falls.
Conclusion: the proposed exercise program was feasible and safe to be applied to independent elderly people, aged between 60 and 82 years, requiring the supervision of two therapists. Data relating to the assessment instruments will be analyzed for further interpretation and discussion of the results.
Implications: Considering the high rate of falls in the elderly population, injuries from falls and treatment costs, the present study proposes to provide a low-cost exercise program with easy access to therapists and the elderly population, and to test its effectiveness, aiming at reducing the risk of falls and their consequences for the elderly and for the Health System.
Keywords: Accidental Falls, Postural Balance, Aged

Conflict of interest: The authors declare no conflict of interest.
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EVALUATION OF THE QUALITY OF EVIDENCE IN SYSTEMATIC REVIEWS ON PHYSICAL THERAPY PUBLISHED IN HIGH-IMPACT JOURNALS: A METAEPIDEMIOLOGICAL STUDY

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Background: Systematic reviews (SRs) are considered the type of study with the highest level of scientific evidence to support decision-making in clinical practice, including in the physical therapy field. In this type of study, in order to establish to what extent the evidence found is reliable, it is highly recommended to use the Grading of Recommendations Assessment, Development and Evaluation (GRADE) tool, as it allows the classification of the quality (certainty) of the evidence of selected studies, through the use of transparent and systematic criteria. When this analysis is neglected, judgment and interpretation of the results presented are impaired, which may reflect on the development and implementation of ineffective intervention and rehabilitation strategies.
Objectives: To evaluate the frequency with which the SRs of interventions in physical therapy, published in high impact journals, use the GRADE tool to analyze the quality of evidence of the included studies.
Methods: Using the Rayyan software, two reviewers independently selected all SRs of physical therapy interventions published in any language, from March 2020 to August 2022, in the 10 journals with the highest impact factor in the field of rehabilitation, evaluated by the Journal Citation Reports (JCR). Divergences were resolved by a third reviewer. The use of the GRADE approach to assess the quality of evidence in the SRs was analyzed using descriptive statistics, with frequencies and percentages.
Results: In the selection, 3,032 records were identified, published in English, of which 2,927 were excluded for not meeting the eligibility criteria. In total, 105 SRs were included, published in journals with an impact factor ranging from 4.762 to 10.714 (JCR, 2021). Among the 105 included SRs, 50.48% (53) used the GRADE tool and 49.52% (52) did not. Of the latter, 25% (13) did not have any type of assessment of the methodological quality or the risk of bias of the included studies, which makes it even more difficult to interpret the reliability of the results.
Conclusion: It was found that a significant part of the SRs on physical therapy interventions, currently published in high impact journals in the rehabilitation field, neglect the systematic and transparent assessment of the quality of the evidence of the included studies. Future systematic reviews should consider evaluating the certainty of the evidence, to increase the clarity and reliability in the interpretation of their results, to better support clinical decision-making.
Implications: This study presents important considerations regarding the lack of transparency on the reliability of the results presented in systematic reviews, even when published in journals with a high impact factor in the area of physical therapy. Failure to carry out a systematic analysis of the certainty of evidence is particularly problematic, as it compromises the safety of published results and does not provide an adequate basis for clinical decision-making by physical therapists.
Keywords: GRADE Approach, Systematic Review, Evidence-Based Practice

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COMPARATIVE STUDY OF THE FUNCTIONAL CAPACITY OF ELDERLY PEOPLE PRACTICING HYDROGYM AND FUNCTIONAL TRAINING

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Background: According to the World Health Organization, aging is a sequential, cumulative, irreversible, individual, universal, and non-pathological process of deterioration of a mature organism, typical of all members of a species. Aging cannot be avoided, but there is a way to ease the process of progressive loss of functional capacity, which influences the quality of life. Thus, data referring to the fragility of the elderly in relation to health care must be identified.
Objective: Compare the functional capacity of elderly practitioners of hydrogymnastics and functional training.
Methods: This is field research, exploratory, descriptive, comparative, longitudinal, with quantitative and qualitative data analysis, carried out from April 2018 to June 2019 at Instituto Senior. The 6-minute walk test (6MWT) and the Duke Activity Status Index (DASI) were applied. Both the test and the questionnaire are reliable tools for assessing functional capacity.
Results: A total of 22 hydrogymnastics or functional training practitioners were evaluated, 4 men and 18 women, with a mean age of 65.95±5.48. Separating by activity, 14 practiced water aerobics (2 men and 12 women) and 8 performed functional training (2 men and 6 women). An average distance of 479.29±72.13 and 462.50±78.92 was observed in the 6MWT and an average score obtained in the DASI of 41.49±11.42 and 49.92±12.24 for practitioners of water aerobics and functional training respectively. It was evidenced that even with aging one can maintain or improve the functional capacity through both modalities.
Conclusion: The practice of physical activity is directly linked to the promotion or maintenance of functional capacity. In the 6-minute walk test, hydrogymnastics practitioners had better performance, in the DASI, functional training practitioners obtained a higher score than those of hydrogymnastics.
Implications: The data show the benefits of practicing water aerobics and functional training in maintaining the functional capacity of the elderly, serving as valid alternatives to preserve the independence, well-being, and quality of life of this population. In addition, the use of assessment tools should be routinely performed in order to monitor the evolution or functional decline of the elderly, demonstrated here by the 6MWT and the DASI, which are easy to apply.
Keywords: Aging, Elderly, Exercise Therapy

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NEUROMUSCULAR ELECTRICAL STIMULATION AND PHOTOBIOMODULATION IN THE FUNCTIONAL RECOVERY OF SARCOPENIA

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Background: Sarcopenia is a musculoskeletal disorder characterized by reduced strength and muscle mass in aging. Photobiomodulation through LED Therapy (LEDT, acronym for Light Emitting Diode Therapy) can influence the components of the mitochondrial respiratory pathway by converting electromagnetic energy into biochemistry, with increased synthesis of adenosine triphosphate (ATP) and growth factors. On the other hand, Neuromuscular Electrical Stimulation (NMES, acronym for Neuromuscular Electrical Stimulation), provides artificial muscle stimuli to replace voluntary stimuli in physical exercise, with muscle hypertrophy responses.
Objectives: To analyze therapeutic responses in muscle thickness and functional tests in elderly women with the simultaneous association of NMES to photobiomodulation through LEDT during a four-week program aimed at the prevention and treatment of sarcopenia.
Methods: The study participants were selected and comprised of 20 sedentary women with an average age of 60 years. The participants were randomly distributed into two groups (G1 and G2). In G1, the participants were treated with NMES (carrier frequency of 2500 Hz; 3 channels and electrodes with a diameter of 7 cm; frequency of 50 Hz, on/off time of 6/18 s in the first week, evolving to 10/30 s in the second week, 12/30 s in the third week and 15/30 s in the fourth week; with 20 minutes of therapy per session). G2 simultaneously associated NMES (similar parameters) and LEDT (set of 10 LEDs coupled to each NMES electrode, totaling 60 LEDs, power of 30 mW/LED, with a wavelength of 830 nm, application time of 180 s and total energy of 324 J in the quadriceps femoris muscle). The electrophotostimulated muscles were the vastus lateralis, vastus medialis and rectus femoris, with a stimulation frequency of three times a week. The analysis of ultrasound scans of the quadriceps femoris and functional tests such as the time up and go (TUG), walking speed and the sit-to-reach test were performed before and at the end of the therapeutic intervention.
Results: Therapeutic interventions through NMES alone or associated with LEDT demonstrated a significant increase in muscle thickness after one month of therapy in all quadriceps femoris muscles. The NMES promoted an increase in the flexibility of the hamstring muscles of the volunteers, observed in the sit and reach test. Neuromuscular electrical stimulation demonstrated a significant increase in TUG tests and gait speed. G2 showed no significant difference in responses to optimize the increase in muscle thickness and muscle functions through the TUG tests and gait speed in relation to the isolated use of NMES.
Conclusion: Electrophototherapy promoted an increase in quadriceps femoris muscle thickness and significant improvements in functional tests. However, the simultaneous association of NMES to LEDT did not demonstrate a significant difference in the supplementation of muscle functions during physical exertion in relation to the isolated use of NMES.
Implications: NMES may prevent and rehabilitate sarcopenia by increasing muscle thickness, improving gait speed and neuromuscular coordination.
Keywords: Photobiomodulation, Electrostimulation, Sarcopenia

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PREVALENCE OF MUSCULOSKELETAL DISORDERS IN RESISTANCE TRAINING PRACTITIONERS IN BRASÍLIA/DF, BRAZIL: A CROSS-CROSS STUDY

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Background: Musculoskeletal disorders (MD) in weightlifting sports are a major health hazard and can significantly affect the quality of life of practitioners. Most studies on the prevalence of MD in sports were carried out in high-income countries, with different characteristics from middle- and low-income countries. In Brazil, few high-quality data are investigating the prevalence of MD in resistance training (RT) practitioners in the country.
Objectives: To investigate the prevalence of MD in RT practitioners in the city of Brasília/DF, Brazil
Methods: A cross-sectional study that recruited 730 RT practitioners of both sexes, aged 18 years or older, regular RT practitioners, who trained at a gym in Brasília/DF registered with the CREF-7, who had not undergone musculoskeletal system surgery in the last 6 (six) months and had not fractured at the time of data collection. The collection was carried out in Brasília-DF, in four gyms that authorized the research to be carried out on their premises. From May to December 2022, participants were invited to participate in the study according to the arrival or departure flow at the gyms. Interviews and self-administered questions were used to estimate the prevalence of pain or injury (PI) in the last 30 days and last 12 months. In addition, sociodemographic information, the anatomical regions affected and the exercises that possibly triggered PI were collected.
Results: The estimate of punctual prevalence of pain was 20.3% and injury 7.4%, prevalence in the last 30 days for pain was 37.7% and injury 12.8%, and prevalence in the last 12 months for pain 42 % and injury 79.7%. The anatomical regions with the highest indications of pain involvement were the lumbosacral spine (34.3%), shoulder (33%) and knee (32.7%). The anatomical regions affected by injury show, in particular, the shoulder regions (31.1%), lumbosacral spine

(29.1%) and knee (14.9%). Exercises identified as triggering pain are squatting (39.7%), bench press (17.7%), leg press (17.7%), rowing (13%), stiff (7%) and extension chair (7%). Among the exercises that possibly triggered the injury, the squat (28.4%), bench press (16.2%), rowing (11.5%), stiff (8.1%) and press (5.4%) stand out. %).
Conclusion: The prevalence of musculoskeletal PI in the last year is higher than existing data in developed countries. The results of this study can be used by the government, the private sector, universities, and professionals working in sports health, providing a better targeting of public policies and research funding, as well as an effective management of musculoskeletal disorders in middle-income countries.
Implications: This study highlights possible risk factors and appropriate interventions for the prevention and treatment of musculoskeletal disorders in Brazil. This is an important step towards revealing the magnitude of the effects of these musculoskeletal disorders, providing guidance for preventive and intervention strategies in this population.
Keywords: Musculoskeletal pain, Musculoskeletal injury, Resistance training

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RELATIONSHIP BETWEEN MUSCULOSKELETAL PAIN AND COVID-19 SEVERITY IN RESISTANCE TRAINING PRACTITIONERS

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Background: Musculoskeletal pain (MP) in sports has been compared to an acute traumatic injury or overuse injury. This scenario represents a challenge for sports science, as it is not fully explained by biomechanics, muscle stress, or overuse injuries. Practitioners of resistance training (RT) affected by COVID-19 still need investigations into the relationship between MP and the severity of COVID-19 because Brazil is still incipient with regard to relevant and quality studies that investigate this relationship.
Objectives: To investigate the relationship between MP and the severity of COVID-19 in the city of Brasília/DF.
Methods: A cross-sectional study that recruited 730 RT practitioners of both sexes, aged 18 years or older, regular RT practitioners, who trained at a gym in Brasília/DF registered with the CREF-7, who had not undergone surgery in the musculoskeletal system in the last 6 (six) months and had not fractured at the time of data collection. The collection was carried out in four gyms in Brasília-DF that authorized the research to be carried out on their premises. Participants were invited to participate in the study according to the arrival or departure flow at the gyms, from May to December 2022. Interviews and self-administered questions were used to estimate the relationship between MP and the severity of Covid-19.
Results: Regarding the prevalence of MP, participants who reported a diagnosis of Covid-19 have a higher prevalence of pain in the last 30 days (42.0% with 95% CI: 31.4% to 52.6%), being higher than the prevalence in the group that did not report a diagnosis of Covid-19 (29.5% with CI 13.5% to 45.6%). In the mild Covid-19 severity groups (did not require hospitalization) and moderate (hospitalization in the ward), men, from social class A, with a postgraduate degree, employed and who have been practicing bodybuilding for more than 12 months, stand out.
Conclusion: The prevalence of pain was higher in RT practitioners who were diagnosed with Covid-19 in the last 30 days, compared to the group that was not affected by Covid-19. Indicating that in Brazil there is a need for coordinated efforts by the government, the private sector, universities, civil society, and health professionals, in order to provide effective management of musculoskeletal pain in people affected by Covid-19.
Implications: This study highlights possible risk factors and appropriate interventions for the prevention and treatment of musculoskeletal pain in Brazil. This is an important step towards revealing the magnitude of the effects of these musculoskeletal disorders, providing guidance for preventive and intervention strategies in this population.
Keywords: Musculoskeletal pain, Resistance training, Covid-19

Conflict of interest: The authors declare no conflict of interest.
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THE EFFECT OF ILIOPSOAS MYOFASCIAL RELEASE ON POSTURAL balance in futsal athletes

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Background: Myofascial release (MFR) is a technique based on the application of compression and stretches to the myofascial complex. MFR has been of potential interest in sports to the injury prevention and the rehabilitation of iliopsoas function; a muscle often injured in futsal athletes. Even though MFR seems to benefit functional performance, such as increased range of motion, reduced myofascial pain and improved postural balance, its effects applied to iliopsoas muscle on neuromuscular responses is still an open question we addressed here.
Objectives: To investigate the immediate effect of iliopsoas MFR on postural balance during standing in female futsal athletes.
Methods: Non-randomized, controlled, before-and-after study with a sample size of 50 participants. Participants performed one session of MFR lasting 5 minutes and involving 15 applications of compression and stretches to the iliopsoas bilaterally. Participants were assessed before and after the intervention and in each session they were asked to stand upright barefoot with their arms alongside the body on a baropodometric platform during four postural tasks lasting 60 seconds each one, involving the manipulation of support base and visual information: i) feet apart with eyes open (EO); ii) feet apart with eyes closed (EC); iii) feet together with EO; iv) feet together with EC. The center of pressure (CP) under the feet was measured (sampling frequency of 100Hz) and the following parameters were computed: the standard deviation and the mean velocity in the antero-posterior (AP) and medio-lateral (ML) directions using the whole trial data. For each condition of support base, a one-way analysis of variance (ANOVA) for repeated measures was used, with

time (before and after) as within-group factor and visual condition (EO and EC) as between-group factor, and post hoc comparisons were made with the Bonferroni test (significance level of 5%).
Results: For the configuration feet apart, ANOVA showed a main effect of time for the AP standard deviation (F=4.715, p=0.032), with a smaller CP variability after than before the intervention, regardless of visual condition (before EO: 4.021±2.515mm, EC: 4.765±4.220mm; after EO: 3.627±2.790mm, EC: 3.950±2.943mm). For feet together, there was na interaction between time and vision (F=3.697, p=0.057), with a difference in CP variability between EO and EC (p=0.056) only before the intervention (before EO: 4.072± 1.919mm, EC: 5.443±3.318mm; after EO: 4.650±2.714mm; EC: 4.915±2252mm). Regarding the other CP parameters, ANOVA did not reveal an interaction or time effect (p>0.05).
Conclusion: The main findings suggest iliopsoas MFR reduces the amplitude of CP sways and the difference in the sway variability (AP) between EO and EC conditions during standing.
Implications: Given the reduction of postural sways' size seems to benefit balance control, the iliopsoas MFR could provide benefits to motor performance in futsal athletes.
Palavras-chave: Myofascial Release; Iliopsoas; Postural Control

Conflict of interest: The authors declare no conflict of interest.
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ASSESSING FUNCTIONING BY WHODAS-12 IN WOMEN WITH DYSMENORRHEA

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Background: Dysmenorrhea is the most common gynecological condition reported by women, and 33% to 50% of them report moderate to severe symptoms. It is defined by menstrual pain in the pelvic region and lower abdomen that can be associated or not to other secondary gynecological conditions (e.g., endometriosis, myoma, adenomyosis). The symptoms are frequently associated with others and can affect women's quality of life and functioning, such as missing school/university/work, decreased sleep quality and fatigue. Those symptoms can be intensified by emotional stress, lower social support and lower socioeconomic conditions. Given the great interference of dysmenorrhea in various spheres of life, a comprehensive evaluation of disability and functioning is necessary for this population.
Objectives: To analyze functioning and the affected domains in women with dysmenorrhea.
Methods: Cross-sectional and online study conducted between 2022 and 2023 with 2,609 Brazilian adult women with dysmenorrhea (27.7 ± 7.4 years old). Pregnant women, with 6 months of puerperium and transgender were excluded. The translated and validated Brazilian Portuguese version of WHODAS-12 for women with dysmenorrhea was used. The WHODAS-12 is an instrument with 12 items developed by the World Health Organization (WHO) to briefly assess health and disability and provide the level of general functioning of the following domains: life activities, mobility, cognition, social participation, self-care, and interpersonal relationships. All the items and domains are directly linked to International Classification of Functioning, Disability and Health (ICF). The maximum score of each domain is 10 points and the higher the score, the greater the disability. Data were analyzed descriptively and presented as the mean and standard deviation in SPSS 22.
Results: The average of life activities domain was 4.7 ± 1.8 points, the mobility domain had 4.5 ± 2 points, the cognition domain had 4.4 ± 1.8 points, social participation had 4.8 ± 2 points, self-care had 2.6 ± 1.2 points, and interpersonal relationships had 4 ± 1.9 points. Interpersonal relationships and life activities were the most affected domains in women with dysmenorrhea.
Conclusion: In addition to pain intensity, the WHODAS-12 provided a screening of other domains of functionality that may be affected in women with dysmenorrhea, such as social participation and activities of daily living.
Implications: From the use of the WHODAS-12, it is possible to evaluate important aspects that are relevant beyond the intensity of pain in women with dysmenorrhea. Thus, clinicians can use WHODAS-12 as a specific and individualized therapeutic goal by approaching the woman from an integrality perspective. In addition, it is also possible to have a broader view of the impact of dysmenorrhea on the quality of life and functioning of Brazilian women.
Keywords: Dysmenorrhea, International Classification of Functioning, Disability and Health, women's health

Conflict of interest: The authors declare no conflict of interest.
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TELEHEALTH CURRICULUM AT HEALTH CARE HIGHER EDUCATION: AN INTERNATIONAL EDELPHI STUDY

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Background: Considering the increasingly frequent use of telehealth, the lack of training of health professionals in telehealth care, it becomes essential to train and specialize future health professionals, with a formal and structured education at a higher level in the use of telehealth. There is no guideline on the core competencies in telehealth at health care higher education, therefore, a consensus is of paramount importance to externally validate these findings, compiling the core competencies in telehealth.
Objective: To identify the core competencies in telehealth needed in the curriculum at higher education.

Methods: International modified eDelphi study conducted in 3 rounds. The panel was made up of expert's researchers in telehealth selected on the Expertscape and Pubmed platform, in addition to clinicians, professors, administrators and higher-level coordinators for the snowball sample. The questions were developed by an international steering committee and tested in a pilot test. The first round was presented to the participants with closed questions, with 47 competences distributed in 11 domains, and an open question, the participants judged the degree of agreement on the competencies and suggested new competencies. The consensus was defined with the competencies that reached high agreement (>75%) at the end of the third round.
Results: Total of 100 participants, from 18 different countries, responded to first round suggesting 2 new competencies and 1 new domain. At the end of the third round with 80 participants, we reached a consensus (>75%) with 47 core competencies in a telehealth curriculum distributed in 12 domains: principles of telehealth; care planning and management; assessment, diagnosis, and treatment; adequacy of the environment; professionalism; legal aspects; patient privacy; patient safety; access and equity; patient preference; technology; applicability of telehealth.
Conclusion: Our framework describes the core competencies distributed in different domains necessary in the telehealth curriculum in health care higher education, recommended by a panel of international experts, clinicians and professors. Future research on implementation and effectiveness needs to be carried out to investigate whether the structure provided in this study covers the need to train future professionals.
Implications: This curriculum is a first step towards promoting higher education and training of future health professionals in telehealth care. The core competencies in a telehealth curriculum make it possible to guide teaching institutions and health course coordinators, regarding the training of students and contribution in the disciplines that use or may use the telehealth resource, being a first step in the educational development of international telehealth.
Keywords: Curriculum, Telehealth, Delphi study

Conflict of interest: The authors declare no conflict of interest.

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COMPARISON OF SYMPTOMS AND CHANGES IN PHYSICAL ACTIVITY LEVEL AFTER COPD EXACERBATION

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Background: Chronic obstructive pulmonary disease (COPD) has periods of stability and exacerbations, and in exacerbated cases there is an increase in symptoms, which may lead to the need for hospitalization, resulting in greater physical inactivity and time in sedentary activities. Thus, it becomes necessary to verify behavior change in relation to the level of physical activity after COPD exacerbation.
Objectives: To compare short-term symptomatology, distance covered in the 6-minute walk test (6MWT) and behavioral change in relation to the level of physical activity using a wearable device in patients after COPD exacerbation.
Methods: This is a longitudinal observational study, in patients after hospitalization for exacerbation of COPD. Patients were evaluated before hospital discharge and after 30 days. An anamnesis was performed, symptomatology was evaluated using the Medical Research Council questionnaires - MRC dyspnea; COPD Assessment Test™ - CAT, a 6-minute Walk Test (6MWT) was performed, and an actigraph activPALT3M accelerometer was placed in the anterior region of the middle third of the right thigh to assess the level of physical activity, which the patient used for 7 days consecutive. Data were analyzed using the SPSS program, and the dependent samples test was used to compare the two moments.
Results: We evaluated 24 patients, 13 (54%) female and 11 (46%) male, with a mean age of 66±7.68 years, FEV1 of 42±9.12%, GOLD 3 (3- 3), length of stay was 6(5-6) days, MRC 3(2-3). There was a significant difference between the moments (pre discharge and 30 days) in CAT 26(20-19) and 17(14-26) (p=0.021), 6MWT 282(214-326) and 347(289-402) (p =0.000), sitting time 1281(974-1326) and 1052(895-1270) minutes/week (p=0.007), standing time 171(129-422) and 306 (160-431) minutes/week (p= 0.035), walking time 63(33-134) and 89 (54-124) minutes/day (p=0.54), number of steps 2839(1331-8417) and 4755(2503-6933) steps/day (p =0.53), inactive time 1281(974-1326) and 1052(895-1270) (p=0.007) minutes/day, active time 421 (305-497) and 1307(1002-1351) (p=0.000) minutes/day.
Conclusion: The main findings were that 30 days after hospitalization for the exacerbation of COPD, the patients showed improvement in symptoms and exercise capacity with a reduction in sedentary time, however, they still had a reduced level of physical activity.
Implications: It is of great importance to assess the symptoms and the level of physical activity of patients who were hospitalized due to exacerbation of COPD, for monitoring and better targeting in rehabilitation.
Keywords: Physical activity, Wearable device, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.

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COMMON ASSESSMENT TOOLS OF POST-STROKE PATIENTS UNDERGOING REHABILITATION: A SCOPING REVIEW

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Background: Stroke is the second leading cause of death and the third leading cause of disability in the world. Its alterations reflect functional impairments that limit the return to participation in Activities of Daily Living (ADLs) and to work. The International Classification of Functioning, Disability and Health (ICF) considers that the interaction of biopsychosocial factors defines health. Addresses

that Environmental Factors, Activity and Participation, Body Structure and Body Functions, interact with the Health Condition and Personal Factors of the individual to consider limitations as disabilities. Rehabilitation is allied to the return to function of post-stroke people, so that it is effective, it is important that the assessment instruments address aspects of the ICF to contemplate a broad aspect of functionality, guaranteeing effective results and therapies appropriate to the patient's needs.
Objectives: Identify the tools used in the rehabilitation of post-stroke patients and their relationship with the domains recommended by the ICF.
Methods: This is a scoping review, developed according to the preferred reporting items for systematic reviews and extension of meta-analyses for scoping reviews (PRISMA-ScR): checklist and explanation. The searches were carried out in the databases: PubMed, Lilacs, Scielo and PeDRO, and the descriptors used were: "stroke", "rehabilitation", "clinical trial" and "randomized clinical trial". Three researchers carried out the research between December 2020 and March 2021. Initially, the selection was performed at the title and abstract level. Subsequently, there was a complete reading and extraction of studies that fit the pre-established criteria. Inclusion criteria: Clinical trials and randomized clinical trials in post-stroke rehabilitation, in English, Portuguese and Spanish, published between 2016 and 2020. Exclusion criteria: Study protocols and studies that didn't use assessment tools to measure outcomes.
Results: 6,750 articles were found and 355 were included. In total, 88 instruments were found in 1,074 citations. There is a wide variety of assessment instruments used in post-stroke patients. The 10 most cited were: the Modified Barthel index, the Modified Ashworth Scale, the Mini-Mental State Examination, the Fugl-Meyer Scale, the National Institute of Health Stroke Scale, the Berg Balance Scale, the Modified Rankin Scale, Action Research Arm Test, Wolf Motor Function Test and Timed Up and Go. Body Functions and Structure covered 77% of the instruments. Activity and Participation 16% and none evaluated participation directly. Environmental factors represented 0.4% and personal factors 1% of the instruments.
Conclusion: Most instruments found evaluate the Structure and Function of the Body. Although there are instruments that measure Activity and Participation, none of them contemplate participation individually, showing that the external context maybe not considered.
Implications: Knowing the instruments available to assess post-stroke patients and their relationship with the ICF makes it possible to assess the biopsychosocial outcomes that affect health. In addition, having more instruments that address the function and structure of the body shows the need to develop instruments that involve participation, as well as its inclusion in scientific research.
Keywords: International Classification of Functioning, Disability and Health, Stroke, Neurology

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COMPARISON BETWEEN ASSOCIATED AND NON-ASSOCIATED PROFESSORS IN STRICTO SENSU GRADUATE PROGRAMS IN RELATION TO PSYCHOSOCIAL ASPECTS OF WORK

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Background: Pression for high production index affects professors, mainly the ones linked to Stricto Sensu Graduate Programs (PP). This scenario may increase the overwork, resulting in long and exhausting working hours. In this way, professors linked to PP can experience high psychosocial risk at work.
Objectives: To compare two groups of professors, according to their involvement in PP, in relation to psychosocial aspects of work: quantitative demands, emotional demands, work-family conflict, stress and burnout. Our hypothesis is that professors associated to PP will present more psychosocial risks.
Methods: Baseline data from the Respira cohort, was used. Professors were invited to participate through advertisements in the media, social networks, and individual emails. Data collection took place from May to December 2022, using an electronic form structured with sociodemographic, occupational and health questions. Psychosocial aspects were assessed using the COPSOQ II-BR instrument. Data were analyzed descriptively, using relative frequencies. The independent variable "being associated in a Stricto Sensu Graduate Program" was dichotomized into associated group (AG) and non-associated group (NAG). The groups were compared using the Chi-square association test.
Results: The study included 954 professors (AG:61.9%; NAG:38.1%) in higher education courses at public institutions with exclusive dedication of 40 hours a week. The mean age was 49 years (±9.7), 51.4% were male. Regarding burnout, 63.5% of the AG and 60.9% of the NAG present psychosocial risk; 15.7% (AG) and 15.4% (NAG) require attention; 20.8% (AG) and 23.7 (NAG) are safe. About stress, 63.6% of the AG and 63.3% of the NAG present psychosocial risk, 16.2% (AG) and 17.1% (NAG) require attention; 20.1% (AG) and 19.6% (NAG) are safe. Regarding work-family conflict, 47.5% of the AG and 43.9% of the NAG present psychosocial risk; 10.3% (AG) and 9.4% (NAG) require attention; 42.2% (AG) and 46.7% (NAG) are safe. About emotional demands, 51.4% of the AG and 50.1% of the NAG present psychosocial risk; 25.5% (AG) and 22.7% (NAG) require attention; 23.1% (AG) and 27.1% (NAG) are safe. Regarding the quantitative demands, 22.2% of the AG and 14.9% of the NAG present psychosocial risk; 18.8% (AG) and 16.5% (NAG) require attention; 59% (AG) and 68.6% (NAG) are safe. Only for quantitative demands, there was a significant association, and the AG had a higher proportion of professors in the risk category.
Conclusion: Associated professors in Stricto Sensu PP showed a higher psychosocial risk in relation to the quantitative demands, demonstrating a greater overload of activities. Despite the other variables not being associated with the groups, it is noted that the professors had high frequencies of psychosocial risk in relation to burnout, stress, work-family conflict, and emotional demands of work.
Implications: These results highlight the psychosocial risks reported by professors and can support the institutions to formulate policies to reduce these risks and promote heath actions for this working population.
Keywords: Faculty, Psychosocial Impact, Occupational Health

Conflict of interest: The authors declare no conflict of interest.
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GAIT TRAINING AND NEUROMODULATION ON EXECUTIVE AND MOTOR FUNCTION IN PARKINSON'S DISEASE: A RANDOMIZED CONTROLLED PILOT STUDY

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Background: Cognitive impartment is recurrent in Parkinson's disease (PD), including deficits in cognitive ability to learn, organize new information, form concepts, and switch focus between tasks (executive functions). These dysfunctions lead to gait alterations, because people with PD tend to prioritize only one activity in dual-task situations. Evidence shows that dual task treadmill training results in improved gait, postural balance, and motor coordination in PD. Transcranial direct current stimulation (tDCS) is a relevant tool in improving cognitive skills by modulating cortical excitability. However, there is a gap in the literature regarding the benefits of the association of these techniques when applied simultaneously in PD.
Objectives: The study aimed to analyze the effects of tDCS simultaneous to dual-task treadmill training on motor function, functional mobility, verbal fluency, and processing speed in people with PD.
Methods: The pilot study of a double-blind, randomized controlled clinical trial including people with PD. People aged 40-70 years, above 24 in the Mini-Mental State Examination, and staging 1.5 to 3 of the modified Hoehn and Yahr scale were included. Eveluated for motor function (Unified Parkinson's Disease Rating Scale Part III - MDS-UPDRS, primary endpoint; Timed Up and Go - TUG test; Timed Up and Go dual task - TUG DT); and cognitive function (Stroop Test; Trail Making Test - TMT; Verbal Fluency Test - VF) before and after the 12 intervention sessions over four weeks. All received 2mA excitatory stimulation in the left dorsolateral prefrontal cortex for 20 minutes and treadmill gait training. The experimental group realized simultaneously a validated protocol for a randomized controlled trial of dual-task training, containing mental sorting, decision-making, and verbal fluency activities. We analyzed the normality of the sample by the Shapiro-Wilk test and the data by the Wilcoxon test, with a significance level of 95%.
Results: Six subjects participated in the study, aged 60 (5.02) years; mixed clinical type (83%); MMSE score of 27.5 (1.71); H&Ymod of 2.08 (0.5); levodopa equivalent dose per day of 765.2 (399.3). They presented in the primary endpoint significant difference in motor function for MDS-UPDRS part III (Z=-2.060; p=0.039), in TUG functional mobility (Z=-1.992; p=0.046) and TUG DT (Z=-1992; p=0.046). As for cognitive function, there was no significant difference for the tests: Stroop (Z=-943; p=0.345); FV (Z=-1.761; p=0.078); and TMT (Z=-0.135; p=0.893).
Conclusion: The results suggest that the association between dual-task training and CBT affected motor function and functional mobility. Processing speed and verbal fluency showed no changes by dual-task training in the study.
Implications: The findings help explore methodologies and introduce new procedures to confirm the effects of the protocol under test.
Keywords: Parkinson's disease, Neuromodulation, Dual-task

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Ethics committee approval: Ethics committee approval: The project was approved by the Research Ethics Committee of the CCS of the Universidade Federal da Paraíba (CEP-UFPB), through Plataforma Brasil, under the number CAAE 30668420.7.0000.5188

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KNOWLEDGE AND SKILLS FOR USING SCIENTIFIC EVIDENCE IN CLINICAL DECISION MAKING

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Background: Evidence-Based Medicine (EBM) is an approach that aims to solve health problems through decision-making based on the best scientific evidence, patient values and preferences, and clinical experience. To this end, health professionals must obtain knowledge and skills that allow them to formulate clinical questions, carry out searches in the literature, carefully evaluate the evidence, carry out the transposition of this evidence into the clinical context and verify its effectiveness for solving the initial problem. Despite the relevance of the topic, there are still few studies that assess the level of knowledge and skills of medical students regarding the use of EBM principles for clinical decision-making.
Objectives: To diagnose the level of knowledge and skills of medical students regarding the use of scientific evidence for clinical decision-making, considering the principles of EBM.
Methods: This is an observational, cross-sectional study with a population of medical students. Inclusion criteria were: Brazilian nationality, being over 18 years old, being enrolled from the 3rd year of the course and taking courses listed in the clinical cycle. Sociodemographic questionnaires and questionnaires on the level of prior knowledge in EBM were used, in addition to the Assessing Competencies in Evidence-Based Medicine (ACE) tool. All instruments were transferred and made available through the Google Forms online questionnaire platform. Data were analyzed using descriptive statistics.
Results: The sample consisted of 45 students, mostly men (68.9%), brown (64.4%), single (84.4%) and enrolled in federal universities (91.1%), between the 3rd and 5th year of the course (56.8%). Most claimed to have knowledge (82.2%), regular skills (57.5%) and apply them (82.2%) in clinical practice, however, the average percentage of correct answers in the ACE tool was 43.97 % and about 41.7% left answers blank.
Conclusion: The results of the study demonstrate that, although most medical students claim to have knowledge and skills for the use of scientific evidence in clinical decision-making, there is a disagreement between the way participants perceive their own knowledge and actual knowledge, considering It was found that after applying the measurement instrument, only a reasonable percentage demonstrated adequate mastery of this clinical practice.
Implications: This study reveals important diagnostic points about knowledge and skills of medical students for the use of EBM that can be used to expand the training of health professionals in EBM. Such an approach helps in the formation of physicians with greater capacity for analysis, autonomy and willing to maintain the continuing

education process to remain informed about the most current evidence that appears in the field of medicine.
Keywords: Evidence-Based Medicine, Scientific Evidence, Training in Medicine

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Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Southern Bahia - 52726421.0.0000.8467.

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WHAT IS THE MOST COMPLETE OBSERVATIONAL METHOD OF ANALYSIS OF BIOMECHANICAL EXPOSURE IN THE CRITERIA USED?

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Background: There is a wide variety of observational methods for analyzing the biomechanical exposure of workers in the work environment. Valentim et al. (2023) performed a systematic review of these methods and identified 10 explicit observational methods of analyzing biomechanical exposure with high quality of evidence and good measurement properties. The lack of studies that analyze the criteria, the specificity and the way in which these methods evaluate the exposure factors, and their dimensions (frequency, intensity, and magnitude) stimulated this study.
Objectives: To present the characteristics and criteria of the 10 most observational methods with adequate reproducibility and validity measurement properties, and with acceptable quality of evidence.
Methods: This is an analytical and descriptive study of the 10 observational methods for analyzing the biomechanical exposure of workers identified in the systematic review by Valentim et al. (2023), being the most researched and with adequate properties for measuring reproducibility, validity, and acceptable quality. of evidence. Three professionals with knowledge and experience in using the methods carried out a weighted assessment, seeking to identify the main characteristics of each method (occupational task evaluated and main posture of analysis), in addition to data on risk factors, their dimensions and body segments of each method. Finally, the influence of each criterion on the risk exposure classification was evaluated, based on the partial and final scores.
Results: Among the evaluated methods, seven of them present characteristics and criteria that allow a general evaluation of the worker in any main posture. The most evaluated risk factors were joint position and range of motion. The EAWS method is the method that most evaluates biomechanical exposure factors (nine out of the ten listed). The ACGIH HAL TLV and RULA do not assess all biomechanical exposure factors. ROSA is the method that evaluates a greater number of body segments. The trunk and isolated segments, such as the shoulder and wrist, are present in the evaluation of seven of the ten methods. The EAWS, PATH, REBA, ROSA, and RULA methods assess the lower limbs in general. Most of the criteria (exposure factors and body segments) evaluated by the 10 observational methods have a great influence on the classification of risk exposure.
Conclusion: The EWAS, OWAS, PATH, QEC, REBA, RULA and SI methods evaluate any task in general. The ACGIH HAL TLV and ROSA methods are directed to specific tasks. The assessment of biomechanical factors and body parts vary between each method and the most complete and detailed observational method among all analyzed in this study is the European Assembly Worksheet (EAWS).
Implications: Getting to know the methods better is essential and will help both in choosing the most appropriate method for the analysis and in choosing more assertive preventive measures in the work environment. Contributing to the decision-making of professionals and favoring the reduction of work-related musculoskeletal disorders.
Keywords: Occupational Risk, Physiotherapy, Occupational Health

Conflict of interest: The authors declare no conflict of interest.
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ELECTROMYOGRAPHIC ACTIVITY OF THE GLUTEUS MAXIMUS DURING PILATES METHOD EXERCISES COMPARED TO THE SQUAT EXERCISE

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Background: Among the muscles worked in the Pilates method exercises, emphasis is placed on activating the Gluteus Maximus (GM), due to its role in pelvic stabilization during functional activities. An ineffective activation of the GM can contribute to lumbopelvic instability and generate overload on the lumbar spine and other joints of the lower limb. In this way, exercises with an emphasis on GM activation are essential for clinical practice in the prevention and rehabilitation of different musculoskeletal disorders, becoming part of the Pilates method and of conventional exercises.
Objectives: To compare the level of muscle activation of the gluteus maximus during Pilates method exercises in relation to conventional exercise.
Methods: This is a cross-sectional study. All participants signed an informed consent form. The following were eligible for the study: women between 18 and 30 years old; without the presence of degenerative diseases in the hip joints and history of injury or trauma in the lower limbs and lumbar spine. Pain in the pelvis and lumbar spine were considered as a criterion for non-eligibility. Personal and anthropometric data from the participants were collected, followed by an exercise protocol associated with the assessment of electromyographic signals from the GM. The Pilates method exercise protocol included: superman, bird dog and pelvic elevation. The squat exercise was performed as part of the conventional protocol. A familiarization of each exercise was performed, followed by three valid executions with an interval of 40 seconds between each repetition and five minutes between each set of exercises. There was a verbal stimulus in relation to the contraction of the GM muscle during the execution. Electromyographic data were performed during the four exercises using Surface Electromyography (EMG). The electrodes were positioned following the SENIAM rules. For the analysis of the electromyographic data, specific routines were used in a Matlab environment, with the mean value of the linear envelope of the three attempts of each exercise and

normalized by the activation peak. After verifying the normality of the data, the One-way Anova test was applied and a significance level of $\alpha<0.05$ was adopted.
Results: There was no statistically significant difference for GM muscle activation during the proposed exercises (α=0.715).
Conclusion: It is possible to conclude that the proposed exercises with an emphasis on the muscle activation of the GM both in the Pilates method and in the conventional exercise protocol, present the same magnitude of muscle recruitment.
Implications: The Pilates method has occupied a prominent place in the prevention and rehabilitation of musculoskeletal disorders of the lumbar spine and other lower limb joints. The squat exercise is also present in clinical practice in conventional rehabilitation protocols, and it was possible to conclude that it has the same muscle activation as the gluteus maximus muscle. Therefore, both methods can be applied as a way of activating and strengthening this musculature with the objective of lumbopelvic stabilization, mainly during functional activities.
Keywords: Electromyography, Exercise Therapy, Muscle Contraction

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Study approved by the Research Ethics Committee of the Faculty of Philosophy and Sciences – Sao Paulo State University, under protocol n° 5.859.083.

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EFFECTS OF STRENGTH TRAINING WITH BLOOD FLOW RESTRICTION AND ELECTROSTIMULATION ON MUSCLE STRENGTH AND ACTIVITY – STUDY PROTOCOL

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Background: Increasing muscle strength may allow an athlete to improve their performance while reducing the risk of injury. Blood Flow Restriction (BFR) has emerged as an alternative for increasing muscle strengh because it can promote physiological changes and hypertrophy with a lower degree of mechanical overload. When combined with Neuromuscular Electrostimulation (NME) it offers the possibility of hypertrophy with greater activation of motor units, potentially increasing the effects of BFR.
Objectives: To evaluate the effects of strength training with BFR combined with NME of the quadriceps muscle in physically active individuals on parameters of strength and muscle activation.
Methods: This protocol is a randomized clinical trial with a blinded evaluator for groups and statistical analysis. Eligibility criteria will be age between 18 and 35 years old; both sexes and physically active according to the International Physical Activity Questionnaire. The following criteria are not considered appropriate: Body Mass Index over 30; use of stimulants in the 24 hours before the examinations; risk factors for thromboembolism and hypertension. Anthropometric data will be collected, followed by blood pressure measurement and kirtometers. Subjects will be randomly divided into three groups: Blood Flow Restriction Group (BFRG), Blood Flow Restriction and Electrostimulation Group (BFREG) and Conventional Exercise Group (CEG). A Vascular Doppler will be used to measure Total Occlusion Pressure (TOP). Maximum Repetition Test (1RM) unilateral will be used to determine the load during exercise, with adjustment in four weeks. An isokinetic dynamometer in concentric/eccentric mode at two angular speeds will be uses to assess muscle strenght: 60°/s and 180°/s, and isometric strength by the 30s test at 30° and 60°. Surface Electromyography (EMG) will be used to record the electrical activity of the quadriceps muscles. The intervention protocol consists of four sets of 30, 15, 15, 15 repetitions in the chair for extension, with one minute rest between sets, a load of 30% 1RM and 50% of POT, with adjustment of 5% each week up 80% of POT. The BFREG follows the same methodology, with an asymmetric biphasic current, frequency of 50Hz and a pulse duration of 400us. In the CEG the exercise will be performed without intervention in three sets of ten repetitions at 70% of 1RM. The training lasts eight weeks and takes place twice a week, with reevaluation at the end of the training. The distribution of normality will be analysed by the Shapiro-Wilk test. To analyse the effect of group and the interventions, ANOVA for repeated measures and Bonferroni post test will be performed. The significant level adopted will be 5%.
Conclusion: It is reasonable to assume that BFR and the intervention associated with electrostimulation are superior to conventional training in terms of strength and muscle recruitment parameters.
Implications: Because BFR requires a reduced load and it has been hypothesised that its effects are similar to those of conventional training, BRF offers mechanical and physiological benefits. Reduced loading may produce the same results in terms of hypertrophy and increased muscle strength in individuals without joint overload and prolonged loading.
Keywords: Muscle Strength, Electromyography, Blood Flow Restriction Exercise

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Study approved by the Research Ethics Committee of the Faculty of Philosophy and Sciences – Sao Paulo State University, under protocol n° 5.809.107.

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EFFECTS OF TWO TELEREHABILITATION PROGRAMS FOR PEOPLE WITH KNEE OSTEOARTHRITIS: PRELIMINARY RESULTS OF A RANDOMIZED CLINICAL TRIAL

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Background: Physical exercise is among the main indications for non-surgical treatment for knee osteoarthritis (OA), however, people with the problem tend to reduce the practice of physical exercise over time, which is a great challenge for professionals who accompany them. An alternative for the maintenance and continuity of supervised physical exercise is to offer it remotely, using telecommunication technological resources for rehabilitation.
Objectives: To evaluate the effects of two telerehabilitation programs on pain, quality of life, functionality and adherence to exercises in people with knee OA.
Methods: This is a randomized, single-blind clinical trial, with pre- and post-intervention assessments and two groups: synchronous (GS), who performed an exercise program via video call through the WhatsApp messaging application; and asynchronous (GA), who

performed the same exercise program with the aid of a booklet with the details of the exercises. The exercise program was to be performed 3 times/week in 45-minute sessions for 6 weeks. Participants in both groups underwent an initial assessment and after the 6 weeks of intervention, with physical performance assessment tests (40-meter Fast Walk Test (T-C40m); 30-second Sitting and Standing Test (T-SL30s) and 9-step Going Up and Down Stairs Test (T-Stairs) and completion of questionnaires (Western Ontario and McMaster Universities Osteoarthritis Index- WOMAC; the World Health Organization Quality of Life -WHOQOL-bref and the TAMPA Scale for kinesiophobia - ETC). They also responded to the Exercise Adherence Rating Scale (EARS) only at reassessment.
Results: 9 participants were evaluated so far (90% female), 5 from the GS and 4 from the AG, with a mean age of 58.4 years, BMI of 30.34kg/m2. There was no interaction between time and groups in relation to all outcomes evaluated in this study. Significant improvement was observed after 6 weeks in relation to ETC and the domain stiffness and total WOMAC score when comparing the pre and post intervention assessments of both groups together (GS+GA). Regarding the EARS, the GS presented an average of 22.4 (3.6) and the GA, 20.3 (3.3) of 24 possible points in section B, and 32.0 (1.0) and 30 .5 (6.3), respectively, out of 36 possible points in section C, indicating good acceptance of both programs.
Conclusion: From our preliminary results, we observed that both telerehabilitation programs are feasible and well accepted by participants. However, it has not yet been possible to make consistent conclusions regarding the synchronous and asynchronous modality regarding pain, quality of life and functionality.
Implications: Telerehabilitation in synchronous and asynchronous modalities can be used as a treatment option to enable continuity of treatment and maintenance of benefits in people with knee OA.
Keywords: Virtual Rehabilitation, Remote Patient Control, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To the Graduate Program in Movement Sciences - UFMS (PPGCMov) and the Coordination for the Improvement of Higher Education Personnel (CAPES).
Ethics committee approval: The study was approved by the Ethics Committee for Research on Human Beings of the UFMS under number 5.833.392.

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ASSOCIATION BETWEEN SEXUAL FUNCTION AND SOCIODEMOGRAPHIC AND HEALTH FACTORS IN BRAZILIAN WOMEN: A CROSS-CROSS STUDY

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Background: The female sexual response is composed of physical and psychological factors, which when altered affect sexual function and can result in female sexual dysfunction (FSD). Despite advances in the literature regarding the FSD, understanding of the influence of sociodemographic and health factors, such as age, marital life, number of pregnancies, use of contraceptive methods, physical activity, urinary incontinence and menopause are still limited.
Objectives: To verify the association between female sexual function and sociodemographic and health factors in Brazilian women.
Methods: This is a cross-sectional study, with Brazilian women aged $\geq$ 18 years, who had sexual intercourse in the last 4 weeks, literate and with internet access, recruited from the dissemination of the research on social networks. Data were collected via Google Forms carried out between October 2021 and August 2022, and contained sociodemographic, health and screening questions. of DSF through the Female Sexual Function Index (FSFI) questionnaire, which has six domains (desire, arousal, lubrication, orgasm, satisfaction, and pain). Each domain has its own score, and when added together, they determine the final score, where values $\leq$ 26.55 represent worse sexual function and risk of having some type of FSD. To measure associations, binomial logistic regression analysis was performed by FSFI domains. DSF screening was the dependent variable, while age, marital status, number of pregnancies, use of contraceptive methods, practice of physical activity (PA), urinary incontinence (UI) and post-menopause were the independent variables. The SPSS program (version 22.0) was used, adopting a significance level of 5%.
Results: A total of 621 women participated, of which 197 (30.5 years $\pm$ 9.3) were at risk for DSF based on the FSFI. As for the associations, the desire domain was associated with the variables UI and menopause (OR=1.61, CI 1.09—2.38, p=0.02); difficulty in the excitation and lubrication domains were inversely associated with the practice of PA (OR=0.53, CI 0.35—0.80, p<0.1; OR=0.62 CI 0.41—0.95, p=0.03, respectively); difficulty in the satisfaction domain was directly associated with UI (OR=2.08, CI 1.30—3.32, p<0.01) and difficulty in the pain domain was inversely associated with the practice of PA (OR=0, 59, CI 0.38—0.91, p=0.02) and directly associated with the presence of UI (OR=2.16, CI 1.32—3.53, p=0.01); difficulty in the orgasm domain was not associated with any of the variables.
Conclusion: The findings of this study indicate that women who do not practice PA had greater impairment in the domains of arousal and lubrication. For the domains of desire, satisfaction and pain, UI was the main factor associated with FSD.
Implications: By presenting the factors that are significantly associated with FSD, it is possible that in clinical practice and research these data are objects of investigation by health professionals aiming at the prevention of FSD.
Keywords: Women's Health, Prevalence, Sexuality

Conflict of interest: The authors declare no conflict of interest.
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VALIDITY OF THE 2-MINUTE WALK TEST TO ASSESS EXERCISE CAPACITY IN INDIVIDUALS WITH PARKINSON DISEASE

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Background: Individuals with Parkinson's Disease (PD) commonly have reduced exercise capacity, which impacts autonomy and quality of life. The 6-minute walk test (6MWT) has adequate measurement properties to assess exercise capacity in this population. However, these individuals have a reduced fatigue threshold, which may make it difficult to apply prolonged exercise tests. Two-minute

walk test (2MWT) is a potential alternative to optimize the measurement of this outcome.
Objectives: To assess the t validity of the 2MWT for assessing exercise capacity in individuals with PD.
Methods: A methodological study was developed. People with idiopathic PD, age $\geq$ 50 years, medically stable for at least 6 months, classified between the stages 1-3 of the modified Hoehn and Yahr scale were included. Individuals were instructed to walk the longest possible distance in six minutes in a 30-meter corridor. Standardized stimuli were provided every minute of the test. In the second and sixth minutes, the distances covered were recorded. Two tests were performed with an interval of 30 minutes or until hemodynamic stabilization. The best total distance covered (in meters) was used in the analyses. Descriptive statistics was used to characterize the sample. Pearson's Correlation Coefficient was used to investigate the correlation between the tests (6MWT and 2MWT). Regression analysis was used to develop an equation to predict the distance covered in the 6MWT based on the 2MWT. The intraclass correlation coefficient (ICC) was used to assess the validity of the equation. The magnitude of the correlation was classified as follows: very low$\leq$ 0.25; low=0.26-0.49; moderate=0.50-0.69; high = 0.70-0.89; and very high = 0.90-1.00. The significance level was α=0.05.
Results: Forty-six individuals, 32 males (69.6%), mean age 66.93$\pm$ 8.34 years, and mean disease duration 8.5$\pm$5.96 years were included. Most were classified at stage 2.0 (54 .3%) and 3.0 (17.4%) on the modified Hoehn & Yahr Scale. Significant, and very high magnitude correlation between the distance covered in the tests was found (6MWT and 2MWT) (r=0.95; $p < 0.001$). The equation developed to estimate the distance covered in the 6MWT explained 91% of the 6MWT variability: 6MWTdistance=46,31+(2,40x2MWTdistance). Significant, and very high magnitude agreement between the distance covered in the 6MWT and predicted by the equation was found (ICC= 0.90; $p < 0.001$).
Conclusion: Preliminary results indicate adequate validity of the 2MWT to assess exercise capacity in individuals with PD. Furthermore, the developed equation was adequate to predict the distance covered in the 6MWT based upon in the distance covered in the 2MWT. However, the study must be completed to ensure the results.
Implications: The 2MWT has potential to assess exercise capacity in individuals with PD, and the developed equation can estimate the distance covered in the 6MWT. This can optimize the measurement of this result, making the measurement feasible.
Keywords: Clinical trials, Exercise capacity, Parkinson's disease

Conflicts of interest: The authors declare no conflicts of interest.
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Ethics committee approval: Comitê de Ética em Pesquisa da Universidade Federal de Minas Gerais (COEP/UFMG) (CAAE: 5.3970.421.0.0000.5149).

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IMPACT OF THE COVID-19 PANDEMIC ON TUBERCULOSIS CONTROL IN BAHIA

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Background: Tuberculosis (TB) is a transmissible infectious disease caused by species of the Mycobacterium tuberculosis complex and, until the emergence of the new Coronavirus Disease (COVID-19), it was the leading cause of death among adults from a single infectious agent. The pandemic emergency substantially affected TB services, as it reorganized actions and health systems with the aim of mitigating transmission and treating those infected with COVID-19, culminating in a break in the TB management chain.
Objectives: To describe and compare the incidence and outcomes of TB treatment in Bahia before and after the emergence of COVID-19.
Methods: This is a retrospective, epidemiological, descriptive and quantitative study using secondary data from new TB cases reported in Bahia between 2017 and 2022, through the National System of Notifiable Diseases (SINAN), available at DATASUS. Data from the pre-pandemic period (2017 to 2019) were compared with the post-pandemic period (2020 to 2022).
Results: Bahia had 16,806 new cases of TB from 2017 to 2019, with an incidence of 114 cases per 100,000 inhabitants. The highest proportion of cases was among males and in the age group of 20 to 39 years, followed by 40 to 59 years. After the onset of COVID-19, from 2020 to 2022, the number of new cases was 14,919 and the incidence of TB was 101 cases per 100,000 inhabitants. The highest proportion of cases remained for males and for the age group 20 to 39 years old, followed by 40 to 59 years old in 2020 and 2021. However, in 2022 there was an inversion between age groups, with a higher proportion of TB between 40 and 59 years old. Regarding treatment outcomes, there were reductions of 33% in TB treatment dropout and 25% in primary dropout. Despite this, there was a 44% reduction in the number of patients cured of TB. Changing treatment regimens increased by 64% and multidrug resistant TB decreased by 18%. Regarding deaths of patients with TB, there was a small increase (2%) in deaths from TB and a 20% reduction in deaths from other causes. Ignored or unfilled outcomes increased 3.97 times post-pandemic.
Conclusion: After the emergence of COVID-19, there was an 11.2% drop in the number of new TB cases in Bahia. Despite the reduction in treatment abandonment, an increase in the number of uncured patients and a slight increase in the number of deaths from TB was observed. The significant increase in ignored or unfilled outcomes can be justified by the reallocation of resources for coping with COVID-19, generating less follow-up of active cases and those undergoing treatment for TB from 2020 to 2022.
Implications: Epidemiological monitoring allows tracing and comparing the profile of patients, knowing health-related outcomes, identifying changes and measuring the impact of COVID-19 on TB care and control, in order to help adapt strategies and goals for better management of patients undergoing treatment and contacts.
Keywords: Tuberculosis. COVID-19. Control of communicable diseases

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Universidade Federal do Sul da Bahia.
Ethics committee approval: As this is an epidemiological study with secondary data, there was no need to register with the Comitê de Ética e Pesquisa, as proposed by Resolution No. 466 of December 12, 2012 of the Conselho Nacional de Saúde.

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ORGANIZATION OF PRIMARY HEALTHCARE FOR USERS WITH CHRONIC MUSCULOSKELETAL PAIN BY PROGNOSTIC STRATIFICATION

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Background: Primary healthcare provides coordinated care to the needs of users of the Brazilian Unified Health System (SUS), within the Health Care Network (RAS), in a collaborative intervention model that involves the primary, secondary and tertiary levels of healthcare. The prognostic stratification of SUS users with chronic musculoskeletal pain can help structure the care network and establish adequate flows for user care.
Objectives: To analyze the prognostic stratification of SUS users with chronic musculoskeletal pain referred to the pain neuroscience education program (*EducaDor*), in the city of Guarapuava, Brazil
Methods: This is an exploratory cross-sectional observational study, following the recommendations of Strengthening the Reporting of Observational Studies in Epidemiology (STROBE). The sample consisted of 140 SUS users with chronic musculoskeletal pain, referred from primary healthcare in Guarapuava city to the *EducaDor* program. The prognostic stratification for chronic musculoskeletal pain was analyzed using the Keele STarT MSK Tool: 0 to 4 points for low risk, 5 to 8 points for medium risk, and 9 to 12 points for high prognostic risk. Sociodemographic data, performance and location of physiotherapeutic treatment (primary healthcare, or medium-complexity clinic) were collected.
Results: The study included 114 SUS users with chronic musculoskeletal pain, aged 55.46±11.9 years, and 79% (n=90) were women. 7% (n=8) of SUS users were low risk, 43% (n=49) were medium risk, and 50% (n=57) were high risk. It was also observed that primary healthcare did not carry out physical therapy interventions for users with low risk, intervening only in users with medium and high risk (n=31; 27.2%).
Conclusion: Primary healthcare performs physical therapy interventions for SUS users with chronic musculoskeletal pain at medium and high prognostic risk. This indicates that an organizational redesign of the referral system for users with chronic musculoskeletal pain should be structured in the public health, keeping SUS users with low risk in primary healthcare. Those SUS users with medium and high risk should be referred to specialized services in the secondary level of healthcare.
Implications: It is necessary to analyze the organization of primary healthcare regarding the referral system for SUS users with chronic musculoskeletal pain. The Keele STarT MSK Tool is an instrument that can be implemented in primary healthcare to organize the Health Care Network of SUS users with chronic musculoskeletal pain and improve clinical decision-making by primary healthcare professionals.
Keywords: Primary healthcare, Chronic pain, Prognosis

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Public Call 11/2020 – Research Programme for SUS. Graduate Support Programme of Private Educational Institutions (PROSUP/CAPES). São Paulo Research Foundation (FAPESP).
Ethics committee approval: Research Ethics Committee of Universidade Estadual do Centro-Oeste (UNICENTRO/Brazil; CAAE 11975019.0.0000.0106; date: 07/15/2022).

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PAIN NEUROSCIENCE EDUCATION IN THE BRAZILIAN PUBLIC HEALTH SYSTEM: PRE-IMPLEMENTATION PROCESS

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Background: Non-pharmacological approaches, including pain neuroscience education, are recommended for the management of chronic musculoskeletal pain. Although, pain neuroscience education is commonly non-implemented in the Brazilian Public Health System (SUS). The implementation of evidence-based practices is challenging at different levels of organizational analysis, including public policies, public management, health services and primary healthcare.
Objectives: To describe the pre-implementation process of a pain neuroscience education program (*EducaDor*) in the SUS, at the organizational level of analysis of public health managers, in the city of Guarapuava, Brazil
Methods: This is an exploratory qualitative study, with the focal group. The *EducaDor* program was presented to a group of five public health managers in Guarapuava city, from Planning and Management Department, Health Information System Department, Regulation Department and Primary Healthcare Department. Then there was a discussion about possible facilitators, barriers, and solutions for the implementation of *EducaDor*, with a written document record. Afterwards, the points discussed were identified in the five domains of the Consolidated Framework for Implementation Research (CFIR).
Results: The main facilitators, barriers, and potential solutions for the implementation of *EducaDor* were: (1) Intervention characteristics – municipal public health does not offer pain neuroscience education to its users, with the interest of managers in its implementation. However, the implementation needs to be carried out in the secondary level healthcare, in partnership with the University; (2) Outer setting – the public health managers recognize the high prevalence of chronic musculoskeletal pain among SUS users, and that most of them have smartphones and internet. The public health managers suggested monitoring SUS users through WhatsApp groups, due to previous experience with the Anti-Tobacco Program, carried out by the Primary Healthcare Department; (3) Inner setting – *EducaDor* is aligned with the Clinical Protocol and Therapeutic Guidelines of the Brazilian Ministry of Health, and strengthens the Health Care Network (RAS) for users with chronic pain; (4) Characteristics of individuals – it was identified the need to strengthen the dialogue with primary healthcare professionals in the Guarapuava city for the success of scheduling SUS users to *EducaDor*; (5) Process of implementation – the case managers, through their study groups, could facilitate the dissemination of *EducaDor* at the various organizational levels of municipal public health to assist the *EducaDor* implementation process.
Conclusion: The barriers, facilitators and solutions identified in the pre-implementation phase of *EducaDor* were essential for the reorganization of the structure and operationalization of *EducaDor*. Continuous monitoring during the implementation of *EducaDor* is necessary to ensure the success of the implementation and

strengthen the collaborative intervention model involving primary healthcare professionals, secondary- level healthcare providers, and patients to enhance self-management of chronic pain in Guarapuava SUS users.
Implications: The implementation of *EducaDor* in the SUS of Guarapuava city may provide information to discuss about pain neuroscience education inclusion in other cities, the best strategies and mode of delivery, and will support the expansion of the implementation science in public health.
Keywords: Chronic pain, Health education, Public health

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Public Call 11/2020 — Research Programme for SUS. Graduate Support Programme of Private Educational Institutions (PROSUP/CAPES). São Paulo Research Foundation (FAPESP).
Ethics committee approval: Research Ethics Committee of Universidade Estadual do Centro-Oeste (UNICENTRO/Brazil; CAAE 11975019.0.0000.0106; date: 07/15/2022).

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EVIDENCE BASED PRACTICE'S RELEVANCE IN OBSTETRICS' TEACHING

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Background: Considering the abusive and inadequate use of interventions in the present brazilian obstetrics scenario and this field's relevance for human and social development, a technically proficient, humanized and updated health assistance is essential. Evidence Based Practice (EBP) becomes a relevant tool in Obstetrics having in mind its capability of promoting individualization and care quality improvement. EBP incorporation in graduation studies can be a determinant in care's quality, clinic results improvement, health practice safety and efficiency during professional life.
Objectives: To evaluate health graduate students' perception about Obstetrics' teaching, taking into consideration EBP presentation during classes. From that assumption, their ability to identify evidence-based interventions within the field.
Methods: Survey like research, applied remotely through Google Forms, with graduate students from a health university. The questionnaire is compound of 12 multiple choice questions aiming to draw participants' academic profile, their EBP in Obstetrics' perception and their ability to identify, within 11 interventions common to Obstetrics (offering non-pharmacological pain relief methods, food intake denial, water intake, encouraging the adoption of mobility and an upright position, adoption of a birth position of the individual woman's choice, lumbar massage, routine use of episiotomy, application of manual fundal pressure, water immersion, skin-to-skin contact with their mothers during the first hour after birth, incentive and orientation to breastfeeding in the first hour of life). From this, 3 interventions are not recommended by the World Health Organization - food intake denial, routine use of episiotomy and application of manual fundal pressure. A descriptive analysis of data was conducted.
Results: 58 students participated in the study, 86,2% were female, with 23,37 average age (19-45 minimum and maximum), from 8 courses (Biomedicine, Nursing, Pharmacy, Phisicaltherapy, Fonoaudioly, Medicine, Nutrition and Psychology). 37 students (63,8%) answered that during graduation classes EBP theoretical and practical concepts were presented in Obstetrics. 10 participants (17,24%) marked at least one of the 3 options not recommended by WHO. 27 participants (46,55%) marked all correct alternatives.
Conclusion: By analyzing available data, a great percentage of graduate health students didn't have contact with EBP in Obstetrics (36,2%). 17,24% from participants wrongly identified interventions not recommended by lack of scientific evidence. Less than half (46,6%) of participants were able to correctly identify all evidence-based interventions proposed.
Implications: With the important growth of obstetrics' field for physical therapy professionals, an academic graduation targeted to offer the best quality care, having as principle EBP and humanized care should be of interest in this professional category.
Keywords: Obstetrics, Evidence Based Practice, Teaching

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA) - (CAAE-64710022.0.0000.5345)

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DO SEX AND AGE MODERATE THE RELATIONSHIP BETWEEN BELIEFS ABOUT PAIN AND CLINICAL OUTCOMES IN INDIVIDUALS WITH CHRONIC SHOULDER PAIN?

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Background: Shoulder pain is one of the most prevalent musculoskeletal conditions in the general population. Beliefs about pain seem to significantly influence the variability of symptoms in this population, however, it is not yet clear how personal, gender, and age variables can influence this relationship between beliefs and pain.
Objectives: Verify whether the personal aspects of gender and age moderate the relationship between pain beliefs and clinical outcomes in individuals with chronic shoulder pain.
Methods: Sixty-seven individuals aged between 18 and 80 years who complained of shoulder pain were evaluated. Age was divided into 3 groups: young adults (18-29 years old), middle-aged adults (30-49 years old), and adults (50-80 years old), and gender was divided into male and female. Pain beliefs, such as pain catastrophizing, kinesiophobia, fear-avoidance beliefs, and self-efficacy, were assessed using the Brazilian version of the Pain Catastrophizing Scale, Tampa Kinesiophobia Scale, Fear-Avoidance Beliefs Questionnaire and Chronic Pain Self-Efficacy Scale experiments, respectively. Clinical symptoms included frequent pain intensity, measured by the Numerical Pain Scale, and upper limb disability, assessed by the Brazilian version of the Disabilities of the Arm, Shoulder and Hand Questionnaire. Moderation analyzes verify the impact of gender and age moderation on the relationship between pain beliefs and clinical outcomes. The significance criterion used was $p<0.05$.
Results: Gender does not significantly moderate the relationship between pain beliefs and clinical outcomes ($p>0.05$), so that men and women had the same pain and disability outcomes in view of variations in pain beliefs. Age moderates the relationship between kinesiophobia and clinical outcomes, so that the positive correlation between pain intensity and kinesiophobia is stronger in middle-aged adults ($p=0.04$) and the positive correlation between disability and

kinesiophobia is stronger in the elderly (p=0.04), both compared to young adults.
Conclusion: The relationship between beliefs about pain and clinical outcomes is similar between men and women. On the other hand, older individuals have a stronger relationship between fear of movement and pain and disability compared to younger individuals.
Implications: To provide the therapist with new tools to help him understand the condition of chronic pain in the shoulder and facilitate clinical decision-making that is more specific to the patient's age. The fact that advancing age potentiates the negative effect of kinesiophobia on pain intensity and upper limb disability, suggests attention to pain beliefs when evaluating people with shoulder pain, over 30 years of age.
Keywords: Biopsychosocial model, Disability, Behavioral aspects

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics and Research Committee of the Federal University of São Carlos (CAEE 71447317.6.0000.5504 and 08180919.0.0000.5504).

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THE EFFECTIVENESS OF PERINEAL MASSAGE IN THE PREVENTION OF EPISIOTOMY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Episiotomy is a common procedure in which a surgical incision is made in the perineum to widen the birth canal. Although it was widely used in the past to expedite delivery and prevent severe tears, systematic reviews have shown that its routine performance does not provide significant benefits and is associated with risks and complications such as edema, infections, dyspareunia, urinary incontinence, and tears. In this context, perineal massage, which involves manual manipulation of the perineal region, can be considered an option as it increases the flexibility of perineal tissues, reducing muscular resistance and, consequently, the chances of tears and the need for episiotomy.
Objectives: Based on the PICOS question, the aim of this systematic review was to evaluate the effectiveness of perineal massage compared with no intervention in preventing episiotomy through randomized controlled trials.
Methods: This study is a systematic review of the literature, following the 2020 PRISMA protocol for its conduction. It was registered on the PROSPERO platform under number CRD42020153045. Among the stages for its preparation are: Development of a guiding question (PICOS), definition of descriptors and databases, as well as eligibility criteria, where only randomized controlled trials in English were included. Two researchers participated in the selection of studies and extraction of results (M.A.B and K.M.M) and a third carried out the consensus (Y.R.C). The risk of bias was assessed using the PEDro scale and a dichotomous representation of the data was created using a forest plot using the RevMan 5.3 software.
Results: Five studies were included in the review. In total there were 683 women in the intervention groups and 678 in the control groups. Perineal massage was superior to no intervention in preventing episiotomy, considering that $p<0.05$, and in the overall assessment of the forest plot with an effect size of 0.46 (95% confidence interval (CI): 0.37 - 0.57) $p < 0.00001$. The lowest score on the PEDro scale was 4 and the highest score was 6, meaning that the studies range from moderate to high risk of bias.
Conclusion: In general, perineal massage was superior in reducing cases of episiotomy when compared to no intervention. We believe that despite the limitations, this study can help health professionals in decision making and help researchers in conducting new studies in the area.
Implications: Perineal massage is an accessible and easily performed procedure that can be done starting from the 34th week of pregnancy by the pregnant woman herself, her partner, or qualified healthcare professionals, including pelvic physiotherapists. Its benefits outweigh the risks, thus making it a part of these professionals' recommendations. Additionally, considering one of the factors influencing the quality of evidence, the risk of bias, it is important for new studies to be conducted with better research designs to reduce recurring systematic errors in clinical trials, thereby providing stronger recommendations.
Keywords: Perineal massage, Perineal trauma, Episiotomy

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HACOR SCALE FOR PREDICTING NON-INVASIVE MECHANICAL VENTILATION FAILURE: TEST OF CLINIMETRIC PROPERTIES

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Background: Non-Invasive Ventilation (NIV) aims to improve pulmonary ventilation and reverse the reason for ventilatory failure. Despite the benefits, improper use can contribute to failure of ventilatory therapy. NIV failure, which translates into the need for orotracheal intubation, is 30% and mortality in this group is 47%. The HACOR scale was developed using HR, RR, PaO2/FiO2 Ratio, Glasgow, Ph and is intended to predict the risk of NIV failure. The scale should be applied after 1h of NIV use. Its score ranges from 0 to 25 points and the closer to the maximum value, the greater the risk of failure. A score above 5 points indicates a greater than 80% risk of therapy failure. The scale showed 72.6% sensitivity and 90.2% specificity for the diagnosis of NIV failure. Given the importance of having a single scale with adequate accuracy for predicting NIV failure available in the literature and the absence of a Brazilian-Portuguese version that tested the clinimetric properties. It is necessary to test the properties so that with the test results, the scale can be used in Brazilian hospitals.
Objectives: Test the clinimetric properties of the HACOR scale in adult patients using NIV in a hospital emergency room.
Methods: The HACOR scale considers heart rate, acidosis (blood pH), Glasgow scale, oxygenation (PaO2/FiO2) and respiratory rate, from 0 to 25 points. The highest score defines the need for intubation (mechanical ventilation-MV) after one hour of NIV in hypoxemic hospitalized patients. Ten minutes later, the second application of the HACOR scale was performed to test the reliability (Intraclass Correlation Coefficient-ICC), measurement error (standard error of measurement-SME and minimum difference detected-DMD), ceiling and floor effect, validity of construct by correlation (Pearson-r) with pulse oxygen saturation (SpO2) and predictive capacity (area under the ROC-curve).

Results: The HACOR scale considers heart rate, acidosis (blood pH), Glasgow scale, oxygenation (PaO2/FiO2) and respiratory rate, from 0 to 25 points. The highest score defines the need for intubation (mechanical ventilation-MV) after one hour of NIV in hypoxemic hospitalized patients. Ten minutes later, the second application of the HACOR scale was performed to test the reliability (Intraclass Correlation Coefficient-ICC), measurement error (standard error of measurement-SME and minimum difference detected-DMD), ceiling and floor effect, validity of construct by correlation (Pearson-r) with pulse oxygen saturation (SpO2) and predictive capacity (area under the ROC-curve).
Conclusion: The HACOR scale has adequate clinimetric properties, however, it showed a floor effect in the sample included in this study.
Implications: The study shows the HACOR scale provides an adequate level of reproducibility within emergency rooms and intensive care units in Brazil. That said, it can be used with greater confidence by Brazilian health professionals during their clinical practice, concretely assisting in the decision of progression to orotracheal intubation and assessment of success of non-invasive ventilation. Besides becoming useful for future studies that will use the scale in Brazil.
Keywords: Noninvasive ventilation, Acute respiratory failure, Clinimetric properties

Conflict of interest: The authors declare no interest conflict.
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HEALTH LITERACY IN ELDERLY CARE: ASSUMPTIONS, CONCEPT AND IMPACTS IN THE FACE OF FALLS

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Background: Elderly people use various sources and information for self-care. Often the sources of information are close people from affective networks, but also technical networks through contacts with health professionals. From these, they build ways of acting in health on aging and its relationships with falls.
Objective: To analyze the assumptions of health literacy to delimit the concept and possible impacts for its effectiveness in the self-care of the elderly in the face of falls.
Methods: Integrative literature review of the concept of Health Literacy, its assumptions for effective self-care of elderly people in the face of falls. To this end, the descriptor "Literacy" was used, in Portuguese, in Databases, through the CAPES Periodicals Portal. Thus, selecting articles related to elderly people's literacy, which discuss the topic of falls.
Results: Initially, 51 articles were located, of which those that did not include elderly literacy and falls in the home/community environment were discarded. Of these, 07 (seven) texts were selected, which in a second reading of the abstract contemplated the theme, remaining with this final number, even after reading all the articles. The assumptions listed were literacy as an enabler, but in its absence, communication through electronic information media supported by health professionals minimizes the educational fragility of the school. Cognitive ability to understand and interpret the meaning of written, spoken, or digital health information provide a critical reflective practice and enhance self-care. As a concept, competence in health literacy is understood as the ability to seek, interpret, criticize, and select health information, producing meaning and transforming it into health actions. To this end, the impact of health literacy on the self-care of elderly people in the face of falls allows them to provide lifelong learning, whether in physical, psychic, social development and in improving the context of life, generating inclusion and citizenship.
Conclusion: Health literacy can be understood as a set of skills used by individuals and communities to seek, select and give meaning to health information. This is influenced by the degree of literacy, cognitive ability and access to information as a basis for building knowledge aimed at transforming it into self-care actions in health. Thus, it generates greater development of the elderly, inclusion and guarantee of social rights.
Implications: Health literacy is an element to be considered for empowering the elderly, improving communication and decision-making autonomy in the face of information available, whether through leaflets, manuals, electronic devices, and health professionals. Thus, producing health promotion actions, prevention of falls and rehabilitation in the face of the aging process and falls.
Keywords: Health Literacy, Physiotherapy specialty, Elderly Health

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PITTSBURGH FATIGABILITY SCALE- BRAZIL VALIDATION FRONT OF THE FUNCTIONAL CAPACITY MEASUREMENT IN THE ELDERLY

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Background: Fatigue is an early indicator of negative outcomes in aging, associated with increased risk of disability and mortality. Recently, the term fatigability was coined, which comprises the individual's subjective perception of fatigue in the face of activities of defined duration and intensity. The Pittsburg Fatigability Scale (PFS) is a validated and standardized instrument for the elderly public, which has been translated into Brazilian Portuguese.
Objectives: To validate the physical subscale of the Brazilian version of the Pittsburgh Fatigability Scale (PFS-Brasil) by evaluating the convergent validity in relation to measures of physical performance.
Methods: Validation study of the PFS-Brasil instrument to assess physical fatigability in the Brazilian elderly population. People aged 60 years or over, Brazilians, without neurological, cognitive or orthopedic alterations limiting the performance of the physical test, were invited to participate in the study. The participants performed a measure of physical performance (Short Physical Performance Battery - SPPB) and answered the Brazilian version of the PFS

(PFS-Brasil). The evaluations were carried out individually in environments with noise, temperature and lighting control to ensure privacy and comfort conditions for the proper performance of the tests. For the analysis of convergent validity, a search was performed to remove extreme values and Pearson's correlation was calculated between the scores on the physical subscale of the PFS-Brasil and the total score on the SPPB and its subdomains. The Bioestat 5.0 program was used to carry out the statistical analysis.
Results: This study is in progress, and partial data are presented here regarding the evaluation of 57 elderly participants (age: 72.3 $\pm$ 6.3 years, 91% women, physically active). The total score on the SPPB was 11.3 ($\pm$0.9) points, indicating good functional capacity of the assessed population, consisting of the assessment of gait speed (1.76$\pm$0.7 m/s), time to sit and lift 5 repetitions (10.7$\pm$2.2 seconds), static balance (3.9$\pm$0.4 points). The score in the assessment of physical fatigability by the PFS-Brasil (14.2$\pm$9.9 points) demonstrated that there is little perceived physical fatigability in individuals (reference value: $<$ 15 points). The physical fatigability assessment scores demonstrated convergent validity both in relation to the total Short Physical Performance Battery score (r = -0.34, p = 0.0093), and in the gait speed subdomains (r = -0.47, p = 0.0002) and sit-to-stand time 5 repetitions (r = 0.2886, p = 0.0294), but not for static balance (r = -0.2546, p = 0.0559). The correlations indicate that as the value of the total PFS-Brasil score increases (greater perceived fatigability), the total SPPB score, the individual's gait speed and static balance decrease, as does the time to perform the repetitions of sit and stand up from a chair, indicating a low functional capacity.
Conclusion: The PFS-Brasil has convergent validity with a measure of functional capacity in elderly Brazilians.
Implications: The characterization of fatigability allows the quantification of an individual's susceptibility to fatigue in the context of standardized physical task(s), being a more sensitive approach to assess the presence and severity of fatigue.
Keywords: Fatigue, Elderly, Validation study

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BENEFITS OF THERAPEUTIC POSITIONING IN THE NEST IN PREMATURE INFANTS HOSTED IN A NICU- A SYSTEMATIC REVIEW

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Background: Strategies for the humanization of the environment and care processes are essential to reduce the impacts that prolonged hospitalization in the Neonatal Intensive Care Unit (NICU) can cause on the development of premature newborns (PTNB). One of the procedures adopted for these purposes is nest positioning (NP), a method that promotes PTNB containment and facilitates the adoption of flexor postures. However, there is a gap in the literature regarding the effects of nest positioning on weight gain, sleep pattern, motor development and hospital discharge.
Objectives: To evaluate the effects of NP on motor development, sleep pattern, weight gain and hospital discharge in PTNB admitted to the NICU.
Methods: The present study was constructed based on the criteria of the PRISMA guideline (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). A systematic search was carried out using search indexes in the following electronic data sources: MEDLINE via PubMed, WEB of SCIENCE, SCOPUS and BVS-BIREME, following the PICOS strategy (P: participants; I: intervention; C: comparison; O: outcomes; S: studies). As eligibility criteria, there was inclusion of studies with populations of PTNB ($<$ 37 gestational weeks from the date of the last maternal menstruation) admitted to the NICU and who used the PN (supine, prone and lateral decubitus) as an intervention strategy in this population. Outcomes related to sleep patterns and weight gain were sought, in addition to others related to motor development. Methodological quality was assessed using the PEDro Scale.
Results: After the selection process, 11 studies were included in the systematic review. Among them, 5 (45.4%) had motor development as the primary outcome, 5 (45.4%) had the sleep-wake cycle pattern as the primary outcome, and 1 (9.2%) study had the primary outcome as the weight gain and, consequently, hospital discharge. According to the PEDro scale, 5 (45.4%) studies had good methodological quality, with scores between 6 and 8, 2 studies (18.2%) had regular methodological quality with a score of 5, and 4 (36.4%) studies scored 4 or less, showing low methodological quality. Qualitative results indicate that prolonged positioning in the nest with variations in decubitus may be favorable for the acquisition of flexor postures, midline stimulation and increase in total sleep time of PTNBs admitted to the NICU. No adverse effects were reported in relation to the use of PN.
Conclusion: There was no evidence of the effects of PN on weight gain and hospital discharge, but there is evidence to suggest that PN is beneficial for motor development and sleep patterns of PTNB admitted to the NICU.
Implications: The results indicate that prolonged positioning in the nest with variations in decubitus can be favorable for the acquisition of flexor postures, midline stimulation and increase in the total sleep time of PTNBs admitted to the NICU.
Keywords: Premature, Patient Positioning, NICU

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Ethics committee approval: Not applicable.

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PERCEPTION OF MANAGERS OF A CENTER SPECIALIZED IN REHABILITATION ON TRAINING IN THE BIOPSYCHOSOCIAL APPROACH

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Background: The Specialized Rehabilitation Centers (CER) are places of reference to assist Persons with Disabilities (PwD) due to their multidisciplinary care character, however, these places are still focused on the biomedical model and the change to a biopsychosocial approach in these centers is essential for comprehensive care. The International Classification of Functioning, Disability and Health (ICF) has been recommended in official documents as a model to reorient practices in the CER, and for that, it is necessary to understand how managers are perceiving this problem in order to establish the processes of Permanent Education in Health (EPS).
Objective: To know the perception of CER managers about the articulation between university and service for the study of the use of the ICF among service professionals through EPS.
Methods: This is an exploratory and qualitative research, carried out with 3 informants at the service's managerial level involved in preparing for the EPS process with a focus on the ICF. Semi-structured interviews were carried out, whose data obtained were analyzed through thematic content analysis. The research is part of an axis of the project Participatory technologies in the care of people with disabilities in specialized care.
Results: In the perception of the managers, the CER workers themselves had already realized the need to improve the reports issued and the need for the team to use the biopsychosocial approach. In addition, higher government entities began to request reports from the CER that were more focused on the capabilities of each one. Regarding the interaction between CER and university, several facilitators were highlighted, such as good communication between teaching and service, the flexibility of both parties to overcome obstacles, organization by proponents, team decision-making and good willingness to adapt to the demands of the service. When it comes to the internal articulation of the service, facilitators were pointed out, such as acceptance, motivation and commitment of professionals and smooth communication between professionals and management; and, barriers such as high demand in the service, temporary closure of activities at the site, complexity of the ICF and turnover of professionals. The CER in question is fertile ground for the ICF implementation process due to the values that the team attaches to training processes and the previous awareness they already had on the subject.
Conclusion: Therefore, it can be seen that the managers considered the articulation between university and service during the organization for the PE process with a focus on the biopsychosocial approach quite natural, transparent and uncomplicated; as well as communication with service professionals to actively participate in the process. However, they recognize the problems that the demands for care produce in terms of obstacles to organizing educational processes.
Implications: Knowing that the biopsychosocial approach and the use of the ICF are mandatory in the "Hearing, Physical, Intellectual and Visual Rehabilitation Instruction" that governs the CER, the practice of PE within this space has been proving to be a promising path. In this sense, knowing the engagement of managers and the reflection they make about this type of approach can be important elements for structuring EPS.
Keywords: Health Centers, Biopsychosocial approach, Permanent Education in Health

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FAMILY INCOME AS AN ENVIRONMENTAL RISK FACTOR FOR CHILDREN WITH DEVELOPMENTAL COORDINATION DISORDER

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Background: Developmental Coordination Disorder (DCD) is a neurodevelopmental disorder characterized by clumsiness at home, school, and in the community. The limitation in activities of children with DCD affects their social participation and quality of life, highlighting the need to identify potential risks for DCD in childhood. The relationship between environmental risk factors and DCD has emerged in the literature to clarify its etiology. However, there is no consensus on this relationship. This study will use the variable "family income" as an environmental risk factor. Contributing this data can be an important outcome for the literature, as knowing the risk factors for DCD allows for identification and intervention as early as possible, in order to minimize the impact of this health condition on children's functionality.
Objectives: To verify the association between family income and DCD in school-aged children.
Methods: This is an observational case-control study. In a convenience sample, 30 children of both sexes, aged between 6 and 11 years, were evaluated and divided into two groups matched by age and sex: DCD group, with 15 children (8.06±1.66 years, 11 girls), and typical development (TD) group, with 15 children (8.06±1.66 years, 11 girls). For DCD diagnoses, all four DSM-V-TR criteria were followed. The instruments used for diagnosis were Movement Assessment Battery for Children – 2 (criterion A), Developmental Coordination Disorder Questionnaire (criterion B), and a sociodemographic questionnaire (criteria C and D). Family income was assessed through the sociodemographic questionnaire. SPSS version 20 for Windows was used for statistical treatment. The chi-square test was performed to verify the association between family income and DCD x TD groups.
Results: A significant difference was found between the DCD and TD groups ($p = 0.001$) concerning family income. In the DCD group, there is a predominance of family income lower than one minimum wage or between 1 and 2 minimum wages. On the other hand, in the TD group, the majority (60%) of children fall into the category of family income between 3 and 5 minimum wages.
Conclusion: In this sample, family income was shown to be an environmental risk factor for DCD in children aged 6 to 11 years. The authors suggest that more case-control studies with larger samples should be conducted to confirm this hypothesis and identify other possible environmental risks for DCD.
Implications: These results have theoretical and practical implications. In theory, the data presented here support the literature on risk factors in DCD and encourage new studies in search of scientific consensus on the subject. In practice, identifying potential risk factors allows for monitoring children in school, especially in primary education and health care, promoting early identification and referral to specialized services.
Keywords: Developmental Coordination Disorder, environmental risk, family income

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Ethics committee approval: Research approved by the Human Research Ethics Committee of the Federal University of São Carlos (approval number 52286421.0.0000.5504).

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AUTONOMIC BEHAVIOR IN POST-THERAPY RECOVERY BASED ON NON-IMMERSIVE VIRTUAL REALITY ASSOCIATED WITH BLOOD FLOW RESTRICTION IN ELDERLY WOMEN

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Background: therapy based on non-immersive virtual reality (VRT) comprises a technique of interaction between the user and the interface system that allows the creation of an environment in which functional and motivational activities can be performed, while training with restricted blood flow (RBF) is an intervention modality that has been used in individuals who do not have good tolerance to high intensities of exercise. Among the various training modalities for the elderly population, both therapies have easy applicability and low financial cost. However, there are no studies on the combination of such interventions in relation to the autonomic outcome in elderly women.
Objectives: To evaluate the behavior of cardiac autonomic modulation after VRT with or without RBF in elderly women.
Methods: This is a cross-over clinical trial composed of 17 elderly women with a mean age of 66.82±4.11 years who underwent three conditions: VRT-RBF, VRT only and control. The VRT was performed using a Nintendo Wii® videogame with the games Hulla Hoop, Free Run and Free Step with a total duration of 21 minutes approximately. For VRT-RBF, occlusion occurred in the proximal thigh and was set at 40% of the absolute occlusion pressure. The control group received an educational session of the same duration as the other conditions. For all groups, initially at rest (20 minutes), during the conditions, and in the recovery period (60 minutes analyzed every 10 minutes), RR intervals were collected for analysis of linear indices of heart rate variability (HRV) in the time domain (RR interval, SDNN, and rMSSD). Descriptive statistics were used and analysis of variance for repeated measures with two factors and significance level of $p<0.05$ was used for comparisons.
Results: There was no effect between conditions and interaction conditions vs. moments for all analyzed indices ($p>0.05$). There was an effect of moment for the RR intervals in the VRT-RBF condition in which the values showed a significant reduction from the baseline moment (95%CI 666-765) until 30 minutes [10′ (95%CI 599-725; $p<0.05$), 20′ (95%CI 618-719; $p<0.05$) and 30′ (95%CI 637-741; $p<0.05$)] of the recovery period.
Conclusion: VRT with or without RBF did not promote autonomic imbalance in the recovery period.
Implications: VRT-RBF can be an exercise alternative for the elderly population, due to its low financial cost and easy applicability that can promote the reduction of the deleterious effects of aging and sedentarism, providing an activity through playful games and favoring motivation and adherence in rehabilitation programs.
Keywords: Virtual Reality Exposure Therapy, Vascular Occlusion, Autonomic Nervous System

Conflict of interest: The authors declare no conflict of interest.

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EFFECTS OF MYOFASCIAL RELEASE TECHNIQUES IN WOMEN WITH FIBROMYALGIA: CASE SERIES

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Background: Fibromyalgia is a syndrome that leads to chronic, diffuse pain and the presence of pressure sensitive points. In addition to pain, people with fibromyalgia have unrefreshing sleep and chronic fatigue, leading to poor quality of life. Added to this, people with fibromyalgia are not very responsive to pharmacological treatment, therefore, physiotherapy, especially with manual therapy techniques, has become an excellent therapeutic option for the treatment of fibromyalgia.
Objectives: To evaluate the influence of myofascial release techniques on pain symptoms, physical capacity, quality of life and sleep in women diagnosed with fibromyalgia.
Methods: This is a clinical, prospective case series study. Ten women, aged 54.5±10.2 years, diagnosed with fibromyalgia for at least six months, attending the extension project "Collective physical therapy care for people with fibromyalgia" at our institution were studied. Before and after the intervention period, participants underwent pain assessment with a visual analogue scale (VAS), which was also applied before and after a single session, quality of life with the Fibromyalgia Impact Questionnaire (FIQ) and sleep with the Pittsburgh Sleep Quality Index (PSQI). As well as assessment of physical capacity with the sit and stand test (TSL), handgrip and time up and go (TUG). The intervention protocol consisted of manual and instrumental myofascial release techniques, applied in the back region and painful points. Participants received eight sessions, lasting 30 minutes, twice a week, over four weeks.
Results: A significant reduction in pain was observed, both acutely, after one session (VAS from 4.1±1.7 to 1.3±1.1; p=0.002), as well as chronically, after the intervention period (VAS from 6.2±2.9 to 2.3±1.5; p=0.006). A significant improvement in quality of life (FIQ from 59.3±7.8 to 33.6±9.1; p=0.0002) and sleep (PSQI from 11.1±5 to 8.9±3 .4; p=0.03). There was a reduction in the time spent to perform five repetitions in the TSL from 17.3±5.8 to 13.5±3.9 seconds (p=0.003), as well as an increase in the number of repetitions over 30 seconds of the TSL from 8.2±3.3 for 11.1±2.6 repetitions (p=0.002). Despite documenting a reduction in TUG performance time from 11.4±8.3 to 8.6±1.3 seconds (p=0.08) and an increase in handgrip strength from 37.2±17.3 to 45.8±12.9 Kgf (p=0.07), these changes were not statistically significant.
Conclusion: Myofascial release was able to reduce pain in women with fibromyalgia. The reduction in pain was accompanied by an improvement in quality of life, sleep, and physical capacity. We suggest that new studies with a more representative sample, with a control group or a group with other interventions, such as classic massage and physical training, are important for the continuity of this line of investigation.
Implications: Myofascial release is an effective technique for physical therapists who treat women with this syndrome, demonstrating a positive effect on several aspects of this syndrome.
Keywords: Fibromyalgia, Pain, Quality of life

Conflict of interest: The authors declare no conflict of interest.

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CONTRIBUTIONS OF THE AXIAL AND SAGITYAL TORQUES OF THE TRUNK TO THE FORWARD DISPLACEMENT OF THE LOWER LIMB AT DIFFERENT RUNNING SPEEDS

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Background: Trunk axial and sagittal torques have been studied as important motors for lower limb movements in tasks such as kicking. Trunk torques are potential contributors to lower limb forward displacement during the swing phase of running in the kinetic chain. In the swing phase of running, the lower limb is initially accelerated forward and subsequently decelerated before contact with the ground. The torques produced by the trunk muscles could contribute, together with the muscles of the lower limb joints, to this function, being important to avoid overloading the muscles of these segments during running. However, there are no investigations in the literature about the contributions of trunk torques to lower limb advancement in running.
Objectives: The aim of the study is to understand the accelerations caused by the axial and sagittal torques of the trunk on the segments of the lower limb, during running, at different speeds.
Methods: Three running cycles with the right lower limb at speeds of 2m/s, 3m/s, 4m/s and 5m/s were used to perform the induced acceleration analysis in the OpenSim software. The sample consisted of ten experienced, healthy male runners. Data were collected on an instrumented treadmill at Stanford University's Human Performance Laboratory and are freely available. A model of the musculoskeletal system allowed estimating the accelerations caused by joint torques in body segments. The anteroposterior accelerations of the thigh, shank and foot segments, induced by axial and sagittal torques of the trunk and sagittal torques of the hip, knee and ankle, were computed. For each segment, the movement was divided into acceleration and deceleration phases. The percentage of the total acceleration induced by the torques was determined by means of the positive and negative integral.
Results: Axial trunk torque was the main inducer of thigh acceleration (63% to 67%), while sagittal trunk torque was the main inducer of deceleration (45% to 57%), at all running speeds. For acceleration and leg deceleration, the hip in the sagittal plane was the main inducer torque (67% to 82%), while for the foot, the sagittal ankle torque was the main acceleration inducer (39 to 49%), while the sagittal torque of the knee was the main deceleration inducer (95% to 98%) The contribution pattern remained independent of running speed.
Conclusion: It is concluded that the trunk axial and sagittal torques contribute to the acceleration and deceleration of the thigh, which is the segment with the greatest mass and inertia of the lower limb, regardless of running speed.
Implications: The study helps in understanding human movement by exploring the effects of torques on joints and segments distal to them. Thus, trunk torque production deficits could overload hip flexor and extensor muscles to accelerate and decelerate the thigh. The study serves as a basis for intervention studies on the trunk and running performance.
Keywords: Running, Trunk, Induced acceleration analysis

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Ethics committee approval: According to the authors of the database, data collection was approved by the research ethics committee on Graduate Studies of Stanford University and all participants consented to participate.

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EPIDEMIOLOGICAL PROFILE AND MAIN MUSCULOSKELETAL INJURIES THAT AFFECT BODYBUILDERS

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Background: It is known that bodybuilding is a safe and effective way to perform exercises, although it is not risk-free. Its main risks for the musculoskeletal system revolve around joint overloads through repetitive use and failure in technical execution. Bodybuilding is one of the most common forms of physical activity. In view of this prior context and the lack of information about injuries suffered by bodybuilders, it is necessary to identify their possible risk factors, which may contribute to injury prevention planning in the future.
Objectives: The objective of the present study was to identify the sociodemographic and epidemiological profile of bodybuilders, as well as the main injuries affected in this public.
Methods: An observational, cross-sectional study was carried out. An online questionnaire was applied through the google forms platform, the inclusion criteria being Residents of the state of São Paulo, who practice bodybuilding in the state of São Paulo on a recreational or professional basis between 18 and 65 years old. The SPSS software was used to calculate the average and percentage in the presentation of the results.
Results: The study analyzed the results of 100 bodybuilders, predominantly aged between 18 and 25 years, most of whom were students or professionals in the field of biological sciences (47%), sleeping more than 6 hours a night (64 %), training in large branches (54%) 3 or 5 times a week (59%) with the main objective of hypertrophy (49%). The prevalence of injuries was 43%, with the shoulder (51%), lumbar spine (39.5%) and knee (27.9%) being the most affected site. 51% of the injuries are classified as overload injuries, reaching yet another profile of practitioners who set up their own training (46.5%).
Conclusion: The sociodemographic and epidemiological profile of bodybuilders in the study was homogeneous between genders, aged between 18 and 25 years, with a height of 1.69 m and a predominantly overweight BMI. Bodybuilding or +1 associated sport was practiced, who slept more than 6 hours a night with a hypertrophy goal. The prevalence of injuries among bodybuilders was 43%, with the most affected sites being the shoulder, lumbar spine and knee.
Implications: The study brings epidemiological data and musculoskeletal injuries in gym practitioners and their training routine, being important to understand the public due to the scarcity of

studies in this area in Brazil. In this way, the data are relevant for researchers to carry out future studies and analyze risk factors associated with their practice, through descriptive data on bodybuilding. And the data is relevant for clinicians to take into account in their rehabilitation plans.

Keywords: Resistance training, Bodybuilding, Injuries

Conflict of interest: The authors declare no conflict of interest.

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CHARACTERIZATION AND THERAPEUTIC APPROACHES TO URINATION DYSFUNCTIONS IN INDIVIDUALS WITH CEREBRAL PALSY

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Background: Individuals with cerebral palsy may be affected by motor, sensory, behavioral and/or autonomic dysfunctions. Among the autonomic dysfunctions, those that affect the urinary tract are very prevalent, with emphasis on the neurogenic bladder. Neurogenic bladder reflects findings of loss of inhibition of detrusor hyperactivity, generating voiding dysfunctions. Such dysfunctions are very frequent; however, their characteristics and approaches have been little systematized in the literature.

Objectives: To present the evidence from the literature that characterize voiding dysfunctions associated with cerebral palsy and the therapeutic approach.

Methods: A systematic review was performed following PRISMA recommendations with the research question structured according to population, intervention, control, and outcome. Two reviewers independently performed searches using the descriptors cerebral palsy' and 'neurogenic urinary bladder' in Portuguese, Spanish and English in Bireme (Lilacs, Medline, Scielo), Cinahl, Cochrane, Pubmed and Web databases of Science, no filters. Only published studies were included that included a sample of individuals diagnosed with cerebral palsy, with data on functional characteristics of the urinary tract and/or treatment. Studies that presented individuals with cerebral palsy and other associated diagnoses and studies with the design of reviews, letters or in the protocol phase were excluded.

Results: 1314 studies were found and 14 were selected (7 cross-sectional studies and 7 cohort studies). The total sample consisted of 1121 individuals with a mean age of 13.12 $\pm$ 8.91 years. The classification showed spastic quadriplegia (n=213), spastic diplegia (n=163), spastic hemiplegia (n=86) and 4 studies did not include classifications. The studies showed as main urinary tract symptoms urge incontinence (64.28%), daytime urinary incontinence (57.14%), stress urinary incontinence (35.71%), enuresis (35.71%), infection urinary tract (28.57%). There was also evidence of a reduction in urinary frequency, voiding fullness, voiding effort, voiding unpredictability, reduction of tension and force of voiding jet, inconstant jet. The therapeutic approach was always linked to the use of medication.

Conclusion: Voiding disorders in individuals with cerebral palsy are characterized by the association of symptoms related to failures in filling and/or emptying the bladder and have been therapeutically addressed only from a symptomatic point of view.

Implications: From a scientific point of view, considering the frequency of urinary dysfunctions, this review presents the urgent need to carry out studies with good methodological parameters that involve evaluation and, above all, other forms of treatment, such as, for example, pelvic physiotherapy. From a clinical point of view, this study directs the evaluative practice to conditions of hyperactivity of the detrusor musculature.

Keywords: Cerebral palsy, Neurogenic urinary bladder, Urinary incontinence

Conflict of interest: The authors declare no conflict of interest.

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RHEUMATOID ARTHRITIS: ASSESSMENT OF CARDIOPULMONARY FITNESS USING NEW SAMPLING TECHNOLOGY

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Background: Although maximum oxygen consumption (VO2peak) is one of the most important measurements in clinical practice, the high cost, time consumption and complications associated with the test have led to the search for simpler devices and the development of equations for estimating of cardiopulmonary fitness (eACP). Since the lungs are one of the sites most affected by rheumatoid arthritis (RA).

Objective: to create a predictive equation for VO2peak obtained by simple sampling technology in women with RA-associated interstitial lung disease (RA-ILD) considering the variables related to pulmonary involvement.

Methods: This cross-sectional study evaluated 47 women with RA-IPD. The participants were submitted to the following evaluations: dosage of autoantibodies; chest computed tomography (CT); assessment of disease activity through the Clinical Disease Activity Index (CDAI); measurement of physical function through the Health Assessment Questionnaire disability index (HAQ-DI); lung function tests including spirometry, carbon monoxide diffusing capacity (DLco) measurement, single-breath nitrogen washout test (N2SBW), impulse oscillometry (IOS) and cardiopulmonary exercise testing (CPET) using the FitMateTM®.

Results: VO2peak was significantly correlated with age (r=-0.550, $p<0.0001$), rheumatoid factor (r=-0.443, p=0.002), anti-cyclic citrullinated peptide antibodies (anti-CCP, r=-0.410 , p=0.004), CDAI (r=-0.462, p=0.001), HAD-DI (r=-0.486, p=0.0005), forced vital capacity (r=0.491, p=0.0004), DLco (r=0.621, $p<0.0001$), phase III slope of the N2SBW test (r=-0.647, $p<0.0001$), resonance frequency (Fres, r=-0.717, $p<0.0001$), respiratory system reactance (r=-0.535, p = 0.0001) , and inhomogeneity of respiratory system resistance between 4-20 Hz (r=-0.631, $p<0.0001$). On CT scan, patients with extensive ILD had significantly lower VO2peak than patients with limited ILD ($p<0.0001$). In the multivariate regression analysis, Fres, DLco and age explained 61% of the VO2peak variability.

Conclusion: As assessed by CPET, women with RA-ILD show reduced ACP, which can be explained at least in part by the presence of small

airway disease, deterioration of pulmonary gas exchange, and advanced age.
Implications: These associations of pulmonary variables with CPET may be clinically important and support the use of the eACP equation to improve patient outcomes.
Keywords: Cardiopulmonary exercise test, Rheumatoid arthritis, Lung function

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: FAPERJ and CNPq.
Ethics committee approval: The protocol was approved by the Research Ethics Committee of the Hospital Universitário Pedro Ernesto (CAAE 87594518.4.0000.5259) and all participants signed the consent form.

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EARLY DETECTION OF NEUROMOTOR DELAYS AND IMPAIRMENTS IN INFANTS AT BIOLOGICAL RISK: PREVIOUS RESULTS

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Background: A risk factor is described as a condition related to a possible negative or unfavorable outcome, which may be environmental, physical, or biological. Prematurity, a biological risk factor, is the major cause of neonatal mortality, associated with neurological sequelae, and has occurred in 1 out of 10 live births in São Carlos in 2019. Thus, access to scales with high sensitivity and predictability is pivotal to early detection (in the first four months of age) of delays or neuromotor impairments. A systematic review showed the predictive value of the General Movement Assessment (GMA) and Hammersmith Infant Neurological Examination (HINE) instruments associated with magnetic resonance imaging for early detection up to five months of age.
Objectives: To early detect motor impairments and delays during the first four months of life in infants with biological risk.
Methods: It is an observational, cross-sectional, and case-control study. Five infants from the biological risk group and five healthy full-term infants from the control group were assessed. Parents and legal guardians had to assign the informed and the image consent form. The identification form was used to characterize the personal and environmental factors. GMA and HINE instruments were performed to evaluate the neuromotor development. The data collection occurred in the home environment or at the Movement Analyses Research Lab (NENEM/UFSCar).
Results: The infants from the control group presented a mean chronological age of two months and 12 days, and the infants from the biological risk group presented a mean corrected age of one month and two days. The majority of the sample was from the female sex (90%), born at eutocyte birth (80%), with adequate weight for the gestational age at birth (90%), born from multiparous mothers (100%), and with gestational difficulties (60%). The most frequent sociodemographic characteristics were single parents (60%), both with complete high school education (80% for mothers and 70% for fathers), the mother's mean age of 30.3 years and the father's 27.2 years. Regarding the GMA results, all infants from the biological risk group were evaluated during the writhing movements period, in which 80% scored as moderately abnormal and 20% as definitely abnormal; only 20% of infants from the control group presented abnormal general movements. At HINE evaluation, 60% of the infants from the risk group presented resistance to shoulder passive movement and absence of alternate kicks in vertical suspension; 60% were unable to follow an object with their eyes; 80% had no auditory response; 100% had persistently fisted hands and 100% presented good suction. The tremors and cramped synchronized movements presence were observed in 60% of the infants from the biological risk group during the assessment throughout both instruments.
Conclusion: Infants from the biological risk group presented signs of neuromotor deficits at two months of chronological age.
Implications: Performing early detection before four months old might allow more efficient physiotherapeutic intervention.
Keywords: Early detection, Infants, Preterm

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Acknowledgment: Participating families. To the Coordination for the Improvement of Higher Education Personnel (no. 88887.702139/2022-00).
Ethics committee approval: Ethics Committee for Research with Human Beings and Animals of the Federal University of São Carlos (CAAE: 58902422.8.0000.5504).

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AN INTERVENTION PROGRAM WITH INTERACTIVE MEDIA FOR EARLY CHILDREN: A FEASIBILITY STUDY

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Background: the insertion of digital media devices has been increasingly prevalent in children's daily lives. The literature lacks evidence about the repercussion of media on children's development, therefore, further studies are needed to monitor the use and effect of these media.
Objective: to verify the viability of an intervention program based on active interactive media for children aged between 24 and 36 months.
Methods: Feasibility study in which 32 children enrolled in the nursery II of the educational institution, aged 24 to 36 months, and their parents/guardians, were invited to participate this study. Children were randomized into two groups: 1) GMIA: children used media actively (games) and GMIP: children used media passively (viewing content). Both groups participated in the intervention for 30 minutes, twice a week, for 4 weeks. Measures: Primary outcome: feasibility of the study regarding the criteria related to the intervention program with interactive media. Secondary outcome: adherence, acceptability, structure, and adequacy of the program to the school environment; degree of satisfaction and acceptability of messages and links and preliminary child development outcomes. Before and after 4 weeks of intervention, the children were assessed for child development, receptive vocabulary, and analysis of the Daily Record Chart on the use of interactive media at home.
Results: Of the 32 eligible children, 22 children participated in the intervention, with an average of 17 children per meeting. As for acceptability, all parents (n= 32) signed the informed consent form,

however, only 15 children (46.8%) were able to complete all stages of the program. As for the suitability of the proposal to the school environment, it was adapted after minor adjustments to the environment. Regarding the structure of the program, an "ideal" duration of 30 minutes of interventions was observed and that the children's interest was greater in the active media group. Most parents reported being quite satisfied with the program, 90% did not feel uncomfortable or dissatisfied with the messages and calls, and 31% correctly answered the daily media record chart over the four weeks. In the analysis of child development, it was observed that there was no statistically significant difference in the pre and post intervention results.
Conclusion: The need for adjustments in the procedures used in the program was identified, which led to structural changes, such as defining the duration of sessions; withdrawal from the daily record chart and changes in the places where the intervention was carried out. In view of the data obtained, it can be concluded that the feasibility study obtained satisfactory results and the changes made allow continuing with the intervention program with interactive media in the educational environment with a longer duration.
Implications: As it is a feasibility study, the results found in the present study affirmed the importance of it for carrying out a large-scale study, to continue with the intervention program with interactive media in the educational environment with a longer period. of duration.
Keywords: Tablet, Child development, Viability study

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Ethics committee approval: Federal University of Jequitinhonha and Mucuri Valleys; 4,035,263.

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STATIC AND DYNAMIC BALANCE IN SERIOUS PATIENTS POST-COVID-19: OBSERVATIONAL STUDY

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Background: Most individuals who have recovered from COVID-19 may have long-lasting systemic impairments. Previous studies have already demonstrated balance changes both in asymptomatic athletes and in patients who manifested the moderate to severe form of COVID-19. Balance uses information from the vestibular, ocular and proprioceptive systems that act in synergy to maintain posture in different conditions, called static and dynamic balance. The simultaneous impacts on static and dynamic balance and possible relationships with muscle strength and functional tests are still unknown in the scientific literature.
Objectives: To compare static and dynamic balance in volunteers with long-term COVID-19 who had the severe form of COVID-19, compared to individuals who did not have a diagnosis of COVID-19.
Methods: Ambispective observational study of the case-control type, being the case, volunteers who presented the severe form of COVID-19, and control, with asymptomatic patients. The volunteers were evaluated after 6 months of hospital discharge, in a university research laboratory. Static balance was assessed using baropodometry and stabilometry and dynamic balance using the MiniBest Test. Muscle strength was assessed by isometric contraction of quadriceps extension and flexion and the 1-minute sit-to-stand test (1MSTS).: Most individuals who have recovered from COVID-19 may have long-lasting systemic impairments. Previous studies have already demonstrated balance changes both in asymptomatic athletes and in patients who manifested the moderate to severe form of COVID-19. Balance uses information from the vestibular, ocular and proprioceptive systems that act in synergy to maintain posture in different conditions, called static and dynamic balance. The simultaneous impacts on static and dynamic balance and possible relationships with muscle strength and functional tests are still unknown in the scientific literature.
Results: Sample of 29 individuals, age 55±12.71, 12% female and 17% male BMI of 27.12± 4.23 /m^2, 38% were sedentary, 62% active, 14 (48.20 %) of the case group (COVID-19). Baropodometry revealed important changes in static balance, specifically in anteroposterior displacements, while performing simple activities with eyes open (2.12±2.18 vs. 1.6±0.57, p=0.05) and eyes closed (3.57±0.98 vs. 2.12±1.32, p =0.05). Stabilometry revealed alterations both in the total postural stability test (TSP) (2.52±2.31 vs. 1.40±0.54, p=0.05) and in the fall risk test (TRQ) (4.93±1.97 vs. 2.65±1.36, p=0.05). As for dynamic balance, the Minibest test also revealed changes in the COVID group (24.57±4.38vs 27,820.57, p=0.05) or? p=0.005?). Isometric muscle strength was lower in the COVID group only for extension (111.5±39.7 vs. 152.8±64, p=0.047), a behavior also observed by the 1MSTS (19.14±-5.47 vs. 27.58±-8.14, p=0.05).
Conclusion: Late changes in static and dynamic balance were found in patients who had the severe form of COVID-19, as well as reduced lower limb strength, functionality and increased risk of falling.
Implications: Understanding the late impacts of COVID-19 on static and dynamic balance, and muscular and functional mechanisms involved, are crucial for the development of effective rehabilitation strate.
Keywords: Covid, Postural control, Strength

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: (CAAE: 36641820.8.0000.8153).

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PREDICTORS OF PARTICIPATION AT HOME OF CHILDREN FROM AGE 0 TO 5 YEARS WITH AND WITHOUT DISABILITIES

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Background: Participation is currently understood as a family of constructs, which include: (1) frequency with which an activity is carried out; (2) level of involvement; (3) personal preference regarding the task; (4) competence, which is the ability to perform a certain task; and (5) self-perception, related to the recognition of one's ability to perform tasks. In children up to 5 years of age, who spend most of their time at home, participation can be affected by environmental factors, whether structural, family or socioeconomic. Participation can be measured through the Young Children's Participation and Environment Measure (YC-PEM), translated into Portuguese as Medida da Participação e do Ambiente – Crianças Pequenas, which is a questionnaire applied to parents/guardians, which assesses the frequency, involvement, desire for change, and

environmental factors in the home, daycare/preschool, and community sections.
Objectives: To identify predictors for participation at home by children between zero and five years of age with and without disabilities.
Methods: Cross-sectional and descriptive study. Those responsible for children with or without disabilities, from age 0 to 5 years and 11 months, recruited from university hospitals and teaching clinics through spontaneous demand were included. The 143 participants answered a sociodemographic questionnaire followed by the application of the YC-PEM. The outcome variables were frequency, with a mean score from 0 to 7, and involvement, from 0 to 5, of YC-PEM. The variables analyzed as predictors were environmental factors of the YC-PEM, classified into supports, barriers, environmental helpfulness, environmental resources and overall environmental support; sex, age in months and typicality (with or without disability) of the children; gender, age in years and schooling of those responsible; family income. The predictor analysis was carried out in two steps: 1) Spearman's correlation check to measure the association between variables, significant if $p<0.20$; and 2) Simple regression for continuous variables and binary regression for dichotomous variables identified as significant in step 1, significant if $p<0.05$, presenting r^2, which portrays the proportion of predictor variance in relation to the outcome.
Results: No correlation was found between the typicality of the child and the frequency (p=0.768) and involvement (p=0.240) in participation; the same was observed for the other variables related to the child, guardian, and family income. It was observed that the environmental factors analyzed by the YC-PEM itself predicted participation: environmental supports predicted both attendance (r^2=0.046, p=0.010) and involvement (r^2=0.037, p=0.021) at home. In addition, the frequency of participation was also predicted by the help (r^2=0.048, p=0.009) and support (r^2=0.046, p=0.010) present in the environment.
Conclusion: It was observed that having or not having a disability does not interfere with children's participation at home, being predicted by the environmental factors of the house. Therefore, having more supports and aids at home makes the child carry out activities more frequently and with commitment.
Implications: The results can guide the planning of interventions aimed at increasing the participation of young children with and without disabilities, in addition to enabling collaboration between therapists and family members to support activities at home.
Keywords: Child health, Home environment, Social Participation

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Acknowledgment: Not applicable.
Ethics committee approval: Ethics Committee of the Faculty of Health Sciences of the Federal University of Rio Grande do Norte – FACISA/UFRN, under registration CAEE: 79628017.0.0000.5568.

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PREVALENCE OF NEUROMUSCULOSKELETAL DISABILITIES IN CHILDREN WITH CEREBRAL PALSY

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Background: Throughout growth and development, children with Cerebral Palsy (CP) progressively develop neuromusculoskeletal deficiencies. These deficiencies interfere with the ability and performance of activities and social participation, and it is of great importance to identify which are the most frequent deficiencies for adequate therapeutic planning.
Objectives: To verify the frequency of the main neuromusculoskeletal deficiencies in children and adolescents with CP at different levels of the Gross Motor Function Classification System (GMFCS).
Methods: Observational and descriptive study. Forty-five children and adolescents diagnosed with (CP) between 3 and 18 years of age from all GMFCS levels were included. The research participants are patients from the neuropediatrics outpatient clinic of the University Hospital of Brasília. Two trained examiners performed a physical assessment of the participants and collected the following variables indicative of neuromusculoskeletal deficiencies, characterizing them as present or absent: equinovarus or valgus foot; decreased range of motion (ROM) or flexion stiffness of knee, elbow, and wrist joints; hip in wind. The percentage of migration (PM) of the hip was also evaluated through radiographic imaging, with the aid of the HipScreen application to calculate the percentage and using cutoff points to determine the presence or absence of hip subluxation and/or dislocation. Statistical analysis was performed using descriptive statistics.
Results: 45 children/adolescents participated, mean age 6.58 years, 62.2% male, 57.7% bilateral spastic, 31.1% classified at level IV of the GMFCS. The most prevalent deficiency was the equine foot, present in 73.3% of the participants, both present in 40% of the evaluated ones. Flexion stiffness of the knees (24.4%) and elbows (13.3%) was observed in children classified as levels III, IV and V of the GMFCS. Rigidity of the flexed wrist was found in 24.4% of the GMFCS II, IV and V children. Two GMFCS V participants had hips in windy conditions. The mean MP of the hip was 18.47 ($\pm$19.95), being lower in GMFCS I (4.50, $\pm$ 5.98) and becoming progressively higher with the increase in the GMFCS level, reaching 22. 95 ($\pm$32.75) in GMFCS V. It was observed that 35.5% of the sample had hip subluxation, distributed in levels II to V, while hip dislocation was present in 4.4% of the sample and only for the GMFCS V level.
Conclusion: Among the deficiencies analyzed, the equine foot affected the sample more homogeneously, and it is concluded that the GMFCS V level is the most affected by deformities in relation to the other levels, and it is important to highlight that children at this level tend to develop the hip dislocation.
Implications: The results allow us to infer that preventive interventions should be used in children and adolescents with CP, to avoid the emergence of the deficiencies and subsequent deformities, mainly the development of the equine foot.
Keywords: Cerebral Palsy, Skeletal muscle, Motor Activity

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Ethics Committee in Research of Faculdade de Ceilândia - University of Brasília, CAAE: 28540620.6.2005.809.

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HOSPITAL ADMISSIONS FOR CIRCULATORY SYSTEM DISEASES IN THE STATE OF BAHIA: A LOOK AT THE PRE- AND POST-PANDEMIC PERIOD

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Background: The New Coronavirus Disease (NCCD-19) has presented itself as an unprecedented challenge to global public health, with the World Health Organization declaring a pandemic emergency in March 2020. The pandemic has challenged the response capacity of health systems and affected the ability of hospitals to provide care, which may have influenced hospitalizations for other causes unrelated to respiratory dysfunctions due to COVID-19, such as circulatory system diseases. These, in turn, cause great impact on public health, because they can generate changes that culminate in sick leave and/or the inability to maintain work activity, besides considerably increasing hospital costs due to the need for expensive hospitalizations, surgeries, and medications.
Objective: To compare hospitalizations for circulatory system diseases in Bahia before and after the emergence of COVID-19 and to observe the most frequent circulatory diseases in 2022 (the year in which the end of the COVID-19 pandemic was decreed.
Methods: This is a retrospective cohort study, of descriptive nature and quantitative approach, based on secondary data, using hospital morbidity data of hospitalizations in Bahia, obtained through the Sistema de Informações Hospitalares do Sistema Único de Saúde (SIH-SUS), available at DATASUS. Data from the pre-pandemic period (2017 to 2019) were compared with the post-pandemic period (2020 to 2022). Data were organized and analyzed using Excel 2010 software.
Results: Between the years 2017 to 2019, 213,632 hospitalizations for circulatory system diseases were recorded, this number represents 8.7% of the total hospitalizations that there were in the State of Bahia in this period. Between the years 2020 to 2022, the recorded number of hospitalizations for diseases of the circulatory system was 201,610, representing 8.9% of the total hospitalizations in the State of Bahia. Despite the reduction in the absolute number of hospitalizations by 5.6%, the percentage of patients hospitalized for circulatory diseases increased from 8.7% to 8.9% when evaluating the total hospitalizations by all causes. In the year 2022, hospitalizations for circulatory system conditions reached the number of 72,722, with stroke, heart failure and acute myocardial infarction being the most frequent, with respectively 20.6%, 18.4% and 12.9% of the total.
Conclusion: The numbers presented and analyzed show a difference, albeit discrete, in the behavior of hospitalizations for circulatory system diseases in the state of Bahia. Moreover, the three circulatory diseases with the highest number of hospitalizations have great potential to generate disabilities, with these patients requiring, therefore, multiprofessional assistance. Thus, the data presented reiterate the impact of circulatory system diseases for public health in Brazil and point to the need for a deeper and more detailed observation to understand the real impact that the pandemic of COVID-19 brought to the epidemiological scenario.
Implications: The data presented has the potential to reinforce the importance of cardiovascular disease prevention, reducing the deleterious impact of functionality, and may generate important health care spending reduction impacts.
Keywords: Public Health, Cardiovascular Diseases, Hospitalization

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THE ACUTE EFFECT OF TDCS COMBINED WITH PHYSIOTHERAPY ON GAIT TURNING IN INDIVIDUALS WITH PARKINSON'S DISEASE: A RANDOMIZED CONTROLLED TRIAL

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Background: Parkinson's disease (PD) is associated with classic motor symptoms such as bradykinesia, rest tremor, muscle rigidity, postural instability, and gait disturbances. They result in reduced gait speed, decreased stride length, increased axial stiffness, and decreased pace that together can trigger difficulties in performing turning. As gait disorders are poorly responsive to levodopa therapy, investigations of additional treatments such as physiotherapy and neuromodulation are of utmost importance. The transcranial direct current stimulation (TDCS) consists of a low intensity electrical current capable of altering the cortical excitability, but its application still brings divergent results and there are no studies that verified the effectiveness of TDCS in turning gait.
Objectives: To verify the effectiveness of transcranial acute anodic direct current stimulation in the motor cortex region (Cz or C3-Cz-C4) combined with physical therapy in improving gait turning in individuals with PD.
Methods: This was a randomized, sham-controlled clinical trial, approved by the Brazilian Registry of Clinical Trials RBR-3mywq86. The sample was composed of 42 individuals diagnosed with idiopathic PD, evaluated in the "on" phase of dopaminergic medication. Participants were divided into four groups: 1) active CBT (Cz) + physical therapy, 2) active CBT (C3-Cz-C4) + physical therapy, 3) sham CBT + physical therapy, and 4) educational lecture + physical therapy. The current intensity was 2mA, applied for 20 minutes prior to the 30-minute physiotherapy session with exercises aimed at improving balance and gait. For the instrumental evaluation of gait turning, the 3D motion analysis system was used in the pre-intervention, post-intervention (immediately after the end of the intervention) and follow up (24 hours after the end of the intervention) moments. For the turning analysis, the patients were instructed to walk at normal speed along a seven-meter walkway and turn around a cone positioned in the middle of the pathway. The following variables were measured: center of mass amplitude, speed, largest radius, number of steps, step length, and cadence. Two-way repeated measures ANOVA was used to compare the groups according to stimulation condition (real, sham, or education), time (pre- and post-intervention), and group vs. time interaction. The significance value adopted was 5%.
Results: No statistically significant differences were found for all gait turning variables when considering the interaction time (pre- and post-intervention) vs. group (active CTE, sham CTE, or Education).
Conclusion: The results of the present study suggest that one session of CBT combined with physical therapy was not effective in improving gait turning in individuals with PD.
Implications: CBT has been used as an additional tool to clinical treatment, but future studies are needed to investigate different stimulation strategies (isolated, combined and multitarget), as well as the frequency, intensity, and duration of treatment in improving gait turning in people with PD.

Keywords: Parkinson's disease, Physical therapy, Transcranial direct current stimulation

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REHABILITATION IN LOW BACK PELVIC PAIN IN PREGNANCY: A BIBLIOMETRIC ANALYSIS

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Background: Pelvic low back pain (PLBP) is a complex and multifactorial pathophysiology, common during pregnancy and postpartum. In the last decade, there has been an increase in research on the rehabilitation of PLBP in pregnancy, seeking to test the effectiveness of treatments and understand the causes of this problem. Therefore, it is necessary to analyze the peer-reviewed literature on the subject to identify different perspectives and gaps on the available field of knowledge.
Objectives: To map the scientific production by analyzing published scientific articles on the rehabilitation of pelvic low back pain in pregnancy.
Methods: The search ((pregnancy OR pregnant AND women) AND (low AND back AND pain OR backache OR lumbar AND pain) AND (physical AND therapy OR exercise OR rehabilitation)) was conducted in March 2023 in the Web of Science and Scopus databases, filtering for primary articles. We identified 294 records in Web of Science and 1,266 in Scopus. The titles and abstracts of the records were analyzed, and 347 articles were excluded according to the criteria: non-primary articles, no relationship between low back pelvic pain, pregnancy and exercise, and duplicate records were also excluded (n=159). Data were analyzed in R (version 4.2.2) with the aid of the bibliometrix package (version 4.1.2).
Results: They have analyzed 1.054 articles from 1980 to 2023 in 454 journals, with an annual growth rate of 6,6%. They have researched on the topic by 3.686 authors, with 3,9% international collaborations. The journals that have published the most on the topic are BMC Pregnancy and Childbirth (n=36) and Spine (n=33). Among the most relevant authors, physical therapist Britt Karin Stuge, a senior researcher at Oslo University Hospital in Norway, was the most productive author on the subject (n = 26). The countries with the most publications in this field of research are the USA (n=239), Sweden (n=158) and Norway (n=138). The most influential study entitled "Prevalence of back pain in pregnancy" by Ostgaard and colleagues (1991), was published in the journal Spine. This is a prospective longitudinal study of 855 pregnant women from the maternity health care system in Gothenburg, Sweden. Due to its long duration, significant sample size, number of questionnaires applied, and observations analyzed, this study is considered the most influential worldwide in this field of research. The authors' keyword co-occurrence analysis resulted in 3 clusters with the themes: low back pain (*"low back pain", "pelvic girdle pain", "pelvic pain", "postpartum", "period postpartum", "disability"*), pregnancy and rehabilitation (*"pregnancy", "exercise", "physical activity", "health women's", "back pain", "rehabilitation"*).
Conclusion: The bibliometric analysis of primary studies on PLBP rehabilitation in pregnancy revealed a marked increase in the last 10 years, evidencing the growing interest in this subject for the prevention and treatment of this pathology. However, it is important to highlight that most of the evidence comes from developed countries.
Implications: Quantitative mapping of the knowledge area can help researchers and health professionals identify more influential experts and sources of information, as well as research gaps in addressing PLBP in pregnancy.
Keywords: Pain, Pregnancy, Exercise

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Social isolation as a risk factor for neck and low back pain: a cotwin design

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Background: Perceived social isolation (PSI) is a personal contextual factor that is associated with morbidity and mortality. It is a factor that contributes to a worse quality of life for individuals, being associated with a worse prognosis for several clinical conditions, including low back pain (LBP) and neck pain (NP). However, information on whether ISP is a possible risk factor for LBP and NP is scarce. The few studies that investigated social isolation in back pain have scope or methodological limitations.
Objectives: To investigate the association between individual ISP and the presence of LBP and NP through a co-twin study.
Methods: Cross-sectional observational study of 141 pairs of complete twins. The sample was taken from the Brazilian Twin Registry. We used self-reported questionnaires to assess the occurrence of LBP and NP (yes or no) and the level of physical activity. The Friendship Scale was used to measure people's PSI. The Peas in a Pod and Pittsburgh Sleep Quality questionnaires were used to determine twin pair zygosity and sleep quality, respectively. Regression models were constructed to investigate whether people's ISP is associated with the occurrence of LBP or NP. Models were adjusted for potential confounders: family factors; age; gender; level of physical activity; and sleep quality.
Results: The sample consisted of adults of good socioeconomic status, mostly female (73.76%). Most had LBP and/or NP (84.75%), social isolation (58.87%), poor sleep quality (62.42%) and did not practice regular physical activity (69.15%). A change of one point in 25 in people's perception of less social isolation represented a 6% reduction in the risk of having NP (OR:0.94; 95%CI:0.84−1.05) and an 8% reduction in risk to present LBP (OR :0.92; 95%CI:0.81−1.05), after adjusting models for possible confounding factors mentioned above, however the confidence intervals included 1.0, so the estimates did not reach significance statistic.

Conclusion: Our study is the first to investigate the association between these variables, adjusting for potential confounders, and the data suggest an association of PSI with NP and LBP, being a possible risk factor that can be taken into account in preventive approaches focused on individuals.
Implications: We consider that the results have a scientific, sociocultural, educational, and clinical practice impact, since the PSI is such an important personal contextual factor that is associated with several clinical conditions of health and quality of life, but which is still subjugated in the literature. We emphasize the importance of further studies to clarify gaps about PSI, particularly post-pandemic as our data were collected before the COVID-19 pandemic, and we believe that PSI risks due to COVID-19 may have increased. We hope that based on these results, health professionals will start to include the ISP in their assessment routine and, thus, more fully address the biopsychosocial model focused on the individual.
Keywords: Social isolation, Neck Pain, Low Back Pain

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EXPLORING MOBILITY DYSFUNCTION IN PEOPLE WITH AND WITHOUT IMPAIRED COGNITION IN PARKINSON DISEASE

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Background: The relationship between mobility and cognition has been studied in the elderly population. In atypical aging, such as Parkinsonś disease (PD), these associations have also been reported. It is believed that people with PD may compensate for mobility deficits using increased attentional resources to overcome deficit. This phenomenon reflects the importance of understanding the relationship between mobility and cognition.
Objectives: To compare gait and balance characteristics in PD individuals with and without cognitive impairment.
Methods: Cross-sectional study, comprising 143 participants with PD divided into two groups according to the Montreal Cognitive Assessment (MoCA) cut-off: 1) without cognitive impairment (MoCA $>$ 26) and 2) with cognitive impairment (MoCA $\leq$ 26). Groups were compared through instrumented and clinical measures for gait and balance in the following domains: sensory orientation, anticipatory postural adjustments, automatic postural responses, and dynamic gait. Clinical measures were obtained from Mini-BESTest. Instrumented measures of gait and balance were obtained via six wearable sensors (Opals, APDM Wearable Technologies, A Clario company), each including triaxial accelerometers, triaxial gyroscopes, and magnetometers, placed on both feet, wrists, sternum, and the lumbar region while performing a total of eight different motor tasks. For data analysis, t-test for independent samples and a general linear model were carried out using the SPSS 28.0.
Results: 72 individuals had cognitive impairment and 71 were considered without cognitive impairment. There was no difference in the total Mini-BESTest score between groups, however, in the dynamic gait domain there was a difference between groups (p=0.010), in which the group with cognitive impairment presented worse performance in dynamic gait when compared to the group without cognitive impairment (p=0.010). When looking at the instrumented measures for gait and balance domains, all significant group differences were under the dynamic gait domain, specifically, dual task gait speed (p=0.004), dual cost stride length (p=0.016), stance time (p=0.038), and turn velocity (p=0.037). For all the instrumented measures where it was possible to verify differences between groups, the worst performance in dynamic gait was presented by the group with cognitive impairment.
Conclusion: Dynamic gait performance was worse in individuals with PD who had cognitive impairment compared to individuals without cognitive impairment, both for clinical and instrumented measures.
Implications: Gait performance differs between individuals with and without cognitive impairment. This fact helps to guide the clinician therapeutic prescription, prioritizing gait training for individuals with PD, rehabilitation strategies focused on mobility, as well as approaches that treat gait and cognition simultaneously, particularly for individuals who have cognitive impairments.
Keywords: Parkinson Disease, Mobility Limitation, Cognition

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Ethics committee approval: Oregon Health & Science University institutional review board (approval no. 4131) and the joint OHSU and Veterans Affairs Portland Health Care System (VAPORHCS) institutional review board (approval no. 8979).

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PERCEPTIONS OF INDIVIDUALS WITH PARKINSON DISEASE REGARDING A TELEREHABILITATION PROTOCOL DURING THE COVID-19 PANDEMIC: A QUALITATIVE STUDY

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Background: Due to the COVID-19 pandemic, changes were necessary in the field of physiotherapy, requiring new models of care that could be promoted by telerehabilitation. Therefore, a group of individuals with Parkinson's disease (PD), who before the pandemic performed face-to-face physical therapy, had their way of treatment replaced by a telerehabilitation program consisting of synchronous remote sessions of physical therapy, provision of graphic material and videos about physical and cognitive exercises and health education activities.
Objectives: To understand the meaning of the experience of individuals living with PD regarding a telerehabilitation protocol.
Methods: This is a qualitative descriptive analytical study with a phenomenological basis in which 20 individuals with PD who

participated in a telerehabilitation protocol for 6 months were included. They were interviewed by telephone calls recorded, guided by a semi-structured script. The interviews were transcribed, categorized, and analyzed, based on the principles of phenomenology following assumptions by Martins and Bicudo (1989). Data analysis was performed in the following stages: transcripts reading; division of the whole transcripts into units of meaning and interpretation; grouping units of meaning in units themes; interpretative synthesis regarding the content of the themes generated by the grouped units of meaning.
Results: From the qualitative analysis, four themes emerged that configure the structure of the phenomenon: 1) Expectations related to physiotherapy through telerehabilitation during the pandemic (includes feelings and thoughts about the expectations related to the beginning of remote physiotherapy after interruption of face-to-face treatment); 2) Experiences of the new daily life (includes the perceptions about the experiences of the new daily life that was configured from the proposed protocol, including the relationship with technology, the perceived changes and the new learnings); 3) Perceptions about themselves in relation to the proposed telerehabilitation program (includes participants' perceptions of themselves during their immersion in the telerehabilitation program); 4) A look at the protocol (includes the opinions and feelings about the protocol and preferences of the participants in relation to the approach modalities).
Conclusion: Apprehension and fear were present in the implementation of the protocol, however, the previous experience with face-to-face physiotherapy and the team allowed feelings of happiness, contentment, welcome and satisfaction with the possibility of returning to activities. The individuals actively participated in the program with commitment and co-responsibility, however, the lack of contact, limited equipment and concern for the safety and individuality of the participants must be highlighted.
Implications: Telerehabilitation was a necessary alternative during the period of the COVID-19 pandemic and brought new learning that may imply the indication and choice of therapeutic approaches nowadays, making it possible to list potentialities and limitations related to their use. Telerehabilitation can be useful when distance separates the patient from the team and can bring advantages such as reducing time and expenses and increasing the volume of treatment. The hybrid approach composed by remote and face-to-face modalities is an interesting option in the field of physiotherapy.
Keywords: Telerehabilitation, Qualitative Research, Parkinson Disease

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PHYSIOTHERAPIST'S PERFORMANCE IN THE CARE OF PERSONS WITH DISABILITIES IN A SPECIALIZED REHABILITATION CENTER

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Background: Physical therapist practices have undergone transformations over the years in the search for the primacy of comprehensive care. In Specialized Rehabilitation Centers, this care model is recommended for the care of Persons with Disabilities.
Objective: To identify and describe the care practices and actions carried out by physiotherapists in approaching Persons with Disabilities in specialized rehabilitation centers based on the comparison between prescribed work and real work.
Methods: This is a qualitative and descriptive study, taking the case study as a guiding model, based on ethnographic analysis resources. The study was developed with the association of three data collection strategies: document analysis, direct observation with conversational approaches and interviews with physiotherapies from an Especialized Rehabilitation Center (ERC) in the state of Paraíba-PB.
Results: The study reveals that there are differences and nuances between the prescribed work and the real work, the physiotherapists partially present, or do not present in their routine, elements such as the practice of reassessing assisted users, elaboration and execution of the Singular Therapeutic Project (STP), and periodic meetings in team, reference and counter-reference practices, communication between the points of the Care Network for people with disabilities and intersectoral articulation, as recommended by the instruction.
Conclusion: Knowledge of the practices allowed for identifying the distance between the prescribed work and the concrete conditions for carrying it out, which makes it possible to adopt strategies to improve the process and organization of work in the ERC.
Implications: The research pointed out important elements for the debate about the performance of physiotherapists in the CERs, elements that can become points of permanent education in health for the physiotherapy professionals of these centers, and secondarily can result in important changes in the process and organization of work of physiotherapists at CER.
Keywords: Physiotherapy, Rehabilitation Centers, Biopsychosocial Models

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THE ORGANIZATION OF THE WORK OF PHYSIOTHERAPISTS IN A CENTER SPECIALIZED IN REHABILITATION

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Background: Physiotherapy in a specialized rehabilitation center (CER) has an important role in the care of Persons with Disabilities (PwD), it can be a fundamental part of adopting the biopsychosocial approach that is sought in these centers, provided that the organization of work is also aligned providing comprehensive care to PwD.
Objective: to know facilitators and obstacles related to the organization of the physiotherapist's work in the Center specialized in rehabilitation and its relationship with the care practices provided to Persons with Disabilities.

Methods: This is a qualitative and descriptive study, taking the case study as a guiding model, developed from ethnographic analysis resources. The study was developed with the association of three data collection strategies: document analysis, direct observation with conversational approaches and interviews with CER physiotherapists in the state of Paraíba-PB, data analysis was performed through the reconstruction of scenes, articulating the elements captured in the data production process.
Results: The study reveals that there are weaknesses in the organization of the work of physiotherapists in the CER in question, and that these have an impact on the way work is conducted and provided to people with disabilities, noting that improvements and adjustments are needed in the organization of work in issues such as: promoting strategies that bring the physiotherapist closer to practices such as welcoming, favoring moments between the physiotherapist and the multidisciplinary team for assessments in an integrated manner and articulation with other points of the care network for people with disabilities, stimulating and organizing strategies to strengthen and include shared care in the sector, and implement strategies such as team meetings and the execution of the Singular Therapeutic Project.
Conclusion: Knowledge of the facilitators and obstacles in the organization of the physiotherapists' work allowed identifying the weaknesses present in the service, which distances these professionals from providing assistance from the perspective of the biopsychosocial approach to CER users, and verifying the aspects that contribute to the distance between work prescribed by the Rehabilitation Instruction, and how the work is performed at the study site.
Implications: Understanding the organization of the work of physiotherapists in health services is still a scarce task in the field of research, so this work raises this debate in the field of physiotherapy. In addition, its results can become important elements for a better understanding of the management of the work of these professionals in the centers and perhaps produce changes in the organization and work process of physiotherapists in the CER.
Keywords: Physiotherapy. Work. Rehabilitation Centers

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6-MINUTE WALK TEST EVALUATION WITH CARDIAC AUTONOMIC CONTROL IN WOMEN WITH SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a complex immune-mediated connective tissue disease characterized by progressive fibrosis due to collagen deposition. In the heart, all structures can be affected, with inflammation, oxidative stress, vascular damage and fibrosis. However, the main underlying mechanism seems to be microcirculation impairment, with abnormal vasoreactivity due to autonomic nervous system (ANS) dysfunction. In fact, ANS dysfunction in SSc patients is associated with a risk of arrhythmias and mortality, in addition to being an early marker of SSc progression that can help identify subclinical involvement and precede the occurrence of cardiac fibrosis. The six-minute walk test (6MWT) is a simple, inexpensive, easy-to-administer, well-tolerated, safe, non-invasive, and reliable submaximal test. In SSc, the 6MWT has been increasingly used to assess performance during exertion and as a follow-up tool and primary measure of outcome and response to therapy.
Objectives: To evaluate the associations between sympathetic-vagal balance and exercise measured by the 6MWT in women with SSc without cardiac involvement.
Methods: This was a cross-sectional study in which 69 women with SS [median age 51 (40−63) years] without cardiac involvement underwent the 6MWT. Throughout the 6MWT, heart rate variability (HRV) was evaluated using specific software.
Results: The median six-minute walk distance (6MWD) was 451 (392−498), with 29 (42%) participants not achieving 80% of the predicted value. Desaturation during the 6MWT (SpO2$\leq$4%) was observed in 10.1% of participants. Significant correlations were observed between the 6MWD and the following HRV parameters: number of interval differences of successive NN intervals greater than 50 ms (rs=-0.397, p=0.013), low-frequency range (rs=0.374, p=0.023), high-frequency range (rs=-0.372, p=0.023), and parasympathetic nervous system index (rs=-0.342, p=0.045). No significant correlation was noted between delta peripheral oxygen saturation and HRV parameters.
Conclusion: In women with SSc, there is an interrelationship between the 6MWD and both vagal withdrawal and sympathetic hyperactivation. This relationship between autonomic imbalance and worse exercise performance could potentially increase cardiovascular risk, even in patients without apparent cardiac involvement.
Implications: People with SS may be involved of the cardiovascular system which, even subclinical, can potentially have an important impact on functional capacity. In this sense, HRV analysis is a powerful non-invasive tool to access the sympathetic and vagal modulations of the heart, in addition to being simple to apply and widely available. Control of the autonomic nervous system of the heart could be a potential target in the treatment of SSc patients. Thus, drug and non-drug approaches that reduce sympathetic hypertonia and prevent parasympathetic withdrawal should be considered to counteract autonomic dysfunction in Ssc.
Keywords: Systemic sclerosis, Exercise, Autonomic nervous system

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VARIABILITY OF 6-MINUTE WALK DISTANCE IN PATIENTS WITH INTERSTITIAL LUNG DISEASE ASSOCIATED WITH DIFFUSE CUTANEOUS SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a connective tissue disease characterized by autoimmunity, small vessel vasculopathy and excessive collagen deposition in the skin and internal organs. Pulmonary involvement is responsible for reducing the functional capacity to exercise and represents the main cause of death. The six-minute walk test (6MWT) is a simple, non-invasive, easy-to-perform, and reliable submaximal aerobic exercise test that can used in patients with advanced lung disease. Patients with SSc often have not only lung disease, but combinations of cardiopulmonary involvement, skin fibrosis, musculoskeletal damage, and joint disease, which can confound the 6MWT interpretation. As it is an independent predictor of SSc-related mortality, the 6MWT is a potentially useful tool in the assessment of outcomes along with pulmonary function tests (PFTs) and computed tomography. Currently, there is a huge concern about the need for early screening, search for new treatments and closer monitoring of patients with diffuse cutaneous systemic sclerosis-associated interstitial lung disease (dcSSs-ILD) before irreversible deterioration of lung function occurs.
Objectives: To build a predictive model for the six-minute walk distance (6MWD) in women with dcSSs-ILD without pulmonary arterial hypertension.
Methods: This is a cross-sectional study in which 69 women with dcSSs-ILD underwent the 6MWT, Health Assessment Questionnaire-Disability Index (HAQ-DI), PFTs (including spirometry, measurement of pulmonary diffusion capacity for carbon monoxide-DLCO and measurement of respiratory muscle strength), handgrip strength (HGS) and quadriceps strength (QS).
Results: The mean 6MWD was 447 $\pm$ 78 m, with 43.5% of the participants not reaching 80% of the predicted value. The 6MWT was positively correlated with HR (r = 0.418, P = 0.0004), forced vital capacity (r = 0.306, P = 0.011), DLCO (r = 0.360, P = 0.002), maximal inspiratory pressure (r = 0.268 , P = 0.029), and maximal expiratory pressure (MEP, r = 0.288, P = 0.019) and negatively with age (r = -0.378, P = 0.001), body mass index (BMI) r = -0.248, P = 0.039) and HAQ-DI (r = -0.438, P = 0.0001). In the multiple linear regression analysis, QS, BMI, DLCO, age and MEP explained 72% of the 6MWD variability.
Conclusion: In patients with dcSSs-ILD, alongside reduced pulmonary diffusion, deterioration in respiratory and peripheral muscle strength negatively impact performance during the 6MWT. Furthermore, the greater the age and BMI, the lower the 6MWD. Our results are promising and may become a contribution to future investigations aimed at new pharmacological therapies for dcSSs-ILD.
Implications: These findings may help the growing number of randomized controlled trials that have emerged in search of disease-modifying therapies for dcSSs-ILD, with the aim of incorporating the 6MWD as a clinical outcome measure.
Keywords: Systemic sclerosis, Interstitial lung disease, Exercises

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EFFECTS OF DANCE THERAPY IN WOMEN WITH BREAST CANCER UNDERGOING RADIOTHERAPY TREATMENT

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Background: Radiotherapy is essential to reduce the risk of locoregional recurrence in patients with breast cancer. However, several symptoms and adverse effects can be manifested during or after radiotherapy. There is evidence that the use of non-pharmacological interventions can reduce symptoms resulting from radiotherapy treatment in cancer patients. Dance/movement therapy (DTM), defined by the American Dance Therapy Association (ADTA) as the psychotherapeutic use of movement to promote the emotional, social, cognitive and physical integration of the individual, could be a way of approaching to minimize the adverse effects of that treatment.
Objectives: Conduct a review on the effects of dance therapy in patients with breast cancer during and/or after radiotherapy.
Methods: The research was carried out between September and November 2022, through searches in the Pubmed, SciELO, Cochrane Library and Google Scholar databases with the search strategy of the descriptors obtained in the Medical Subject Headings (MESH) of the National Library of Medicine with the combination of keywords and the following Boolean operators: ((Dance therapy or Therapy or Dance or Dance Therapies or Therapies or Dance or dance movement therapy) AND (Breast cancer or Breast Neoplasm or Neoplasm or Breast or Neoplasms or Breast or Breast Tumors)) AND (Radiotherapies or Radiation Therapy or Radiation Therapies or Therapies, Radiation or Therapy or Radiation). Studies that addressed the use of dance therapy in patients with breast cancer undergoing radiotherapy were included. Exclusion criteria were studies involving patients with other types of cancer and studies made available in languages other than Portuguese and English.
Results: A total of 3,966 articles were found in the four searched databases. After reading the title and abstract, 16 articles were selected and read in full. Of these, 3 articles remained in the study for analysis. The results presented in this review demonstrate that dance therapy can contribute to improving or reducing the perception of stress, anxiety, fear, fatigue, pain, internal reconnections, in addition to improving functionality, returning to activities of daily living and improving the quality of life of patients undergoing radiotherapy.
Conclusion: Dance therapy can help improve morbidities in patients with breast cancer undergoing radiotherapy.
Implications: Dance therapy is a clinically relevant intervention, but it has few studies in the oncology area. More studies are needed, with better standardization of the intervention, for better scientific evidence of the effects of dance therapy in these patients.
Keywords: Dancetherapy, Breast neoplasm, Radiotherapy

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APPLICATION OF TIMP SCALE ON THE HOSPITAL ENVIRONMENT: A REALITY FOR EARLY INTERVENTION IN PRETERM INFANTS

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Background: The upscale of surlife on preterm neonates (PTN) is due to the advances in antenatal care, those individuals must have

higher chances of showing delays on the psychomotor development. Prematurity may be associated with antenatal external factors, such as socioeconomic conditions and low education level and the postnatal variables, such as the birth weight and growth percentile. The Test of Infant Motor Performance (TIMP), it is a clinical tool highly sensitive to small changes in motor performance. As much sooner as changes are detected on motor milestones, sooner the intervention will occur.
Objectives: Analysis on the motor development profile in PTNs.
Methods: Cross-sectional study. performed in a joint accommodation (JA) in a public hospital in Brazil. It included the neonates (NT) with gestational age (GA) higher than 34 and stable, excluding NTs with genetic syndromes, congenital malformations, osteomyo-articular disorders, sensory impairments, and neurological disorders. The tool used was the TIMP scale, the childs were filmed and evaluated by a blind researcher who has scored and categorized the groups with or without changes in the motor performance. In the data analysis we wore the Minitab® 14 statistical package, the statistical significance was considered as $p<0.05$. For the comparison between the groups, we used the unpaired *t* test or the Mann Whitney depending on the data distribution.
Results: The sample of the study was composed of 8 neonates' terms and 6 preterm neonates. Regarding the characterization of the sample, the maternal age of the group of PTN was 26.4 ± 6 and the group of NNT 25.1 ± 6.7, the inferior social class was 100% and 75%, appointment number of antenatal 6.2 ± 1.3 e 7.2 ± 3.2. Considering the head circumference the PTNs presented 28.7 ± 2.6 and the NNTs 39.2 ± 2.1, chest circumference 27.5 ± 1.2 and 33.8 ± 1.9, the GA 33.2 ± 2.2 and 39.7 ± 1.3, birth weight 1707 ± 258 and 3275 ± 388, and height 37 ± 7.7 e 49.2 ± 2.6 respectively. The data related to the brute score from TIMP have shown that the PTNs had the score lower (42.1 ± 2.4) to the NNT (48.5 ± 5.7), $p = 0.01$.
Conclusion: This current research shows that there is a statistically significant difference in the motor performance on pre preterm neonates in the hospital environment. Thus, showing that the early detection enables the implementation of sensorimotor intervention programs performed by a child physiotherapist.
Implications: Premature infants presenting motor decline in the first months of life, presents commitment to learning and social interaction, pointing to the relevance of having a professional physiotherapist on JA and the role of early intervention guiding the parents and reducing the consequences of prematurity.
Keywords: Prematurity, Child Development, Psychomotor Development

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Comitê de Ética em Pesquisa da Universidade Federal de Santa Catarina, protocolo n° 08989819.2.0000.0121.

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DEVELOPMENT OF A PROTOCOL WITH BEHAVIORAL STRATEGIES TO INCREASE ADHERENCE TO THE PRACTICE OF SELF-ADMINISTERED HOME EXERCISES IN POST-STROKE INDIVIDUALS

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Background: Home rehabilitation in post-stroke patients seems to be more beneficial than hospital or outpatient treatment, as it allows the repeated practice of tasks incorporated in the person's own environment. However, patient adherence to treatment is a crucial determinant of rehabilitation.
Objective: This study aims to develop a clinical trial protocol for the feasibility of a group task-oriented therapy (TOT) program in post-stroke patients, which uses behavioral strategies based on the Theory of Self-Determination to increase adherence to guidance from patients. home exercises.
Methods: Initially, a protocol development study will be carried out, without a control group, with pre and post intervention evaluations that will last for 6 weeks. Participants will be 20 individuals diagnosed with stroke who will be submitted to a group TOT program twice a week, lasting 1 hour and to a self-administered home exercise program. Behavioral strategies will be applied during the TOT and the results will be compared with the pre-intervention assessments. The exercises will be organized in the form of four tasks, targeting specific movement components that must be performed for a certain number of repetitions defined individually. The primary outcome measure is adherence to the exercise program and will be assessed using the Exercise Adherence Assessment Scale (EARS-Br); adherence to formal guidance on the home exercise program (self-monitoring diary) and motivational regulations, self-determination and basic psychological needs assessed using the Exercise Behavioral Regulation Questionnaire (BREQ-3) and the Basic Psychological Needs on Exercise scale (BPNES). The feasibility of the methods and protocol performance aiming at a future large-scale randomized controlled clinical trial (RCT) will be explored using predefined feasibility criteria. Feasibility criteria include (1) a minimum 75% adherence rate to home exercise (self-monitoring diary), (2) a minimum 10% change in the Exercise Adherence Rating Scale (EARS-Br) from control week, without behavioral strategies; (3) at least a 10% change in behavior between pre- and post-intervention (assessed using the BREQ-3; (4) a 10% change with the protocol in basic psychological needs assessed using the BPNES pre- and post-intervention.
Results: This protocol may contribute to increase adherence to home exercises in post-stroke patients and help in the change of patients' behavior. The characterization of the sample will be presented through descriptive analysis; the frequency of the practice of household chores, through means and standard deviation and adherence rate to the number of prescribed repetitions (%).
Conclusion and Implications: results will allow us to define the protocol and identify the preliminary viability in increasing adherence to the practice of self-administered home exercises, changing behavior and changing basic psychological needs.
Keywords: Stroke, Adherence, Behavior change, Self-Determination Theory

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Thanks to the UDESC postgraduate program that grants the PROMOP scholarship. To post-stroke individuals who participated in the study and their families, to LADECOM colleagues.
Ethics committee approval: The study was approved by the Human Research Ethics Committee of the State University of Santa Catarina (UDESC) under Opinion N°: 5315495.

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PILATES EXERCISES FOR THE PREVENTION OF MUSCULOSKELETAL DISORDERS DURING PREGNANCY: PROTOCOL OF A PILOT RANDOMIZED CONTROLLED TRIAL WITH ECONOMIC EVALUATION

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Background: During pregnancy, women undergo biopsychosocial changes that can be accompanied by musculoskeletal complaints. Pilates is a type of body and mind exercise that may be an option to preventing these complaints. However, there is still no evidence on its effects in preventing of musculoskeletal complaints in pregnant women.
Objectives: To evaluate the feasibility of Pilates in preventing of musculoskeletal complaints throughout the entire gestational period in pregnant women. Secondary objectives will be to identify the occurrence of musculoskeletal complaints and the number of days from randomization at which these complaints occur, evaluating the type of delivery at birth, and comparing costs related to the gestational period in in woman with routine risk pregnancies and musculoskeletal complaints.
Methods: In this randomized controlled pilot study with economic evaluation, 20 pregnant women at routine risk in the 12th gestational week will be randomly allocated into two groups: usual care group, which will receive an educational booklet with information about on routine pregnancy care, and Pilates group, which will receive the same educational booklet and will participate in a specific Pilates exercise program for pregnancy, twice a week, throughout the gestational period. The primary outcomes will be acceptability, suitability, feasibility and fidelity. Secondary outcomes will be the occurrence of a musculoskeletal complaints and the number of days from randomization at which these complaints occur, type of delivery, costs of maternal and fetal healthcare, costs for the pregnant woman and family, and costs of productivity loss at work (presenteeism and absenteeism). Assessments will be conducted at the 12th, 24th and 36th weeks of gestation, and seven to 15 days after delivery, using questionnaires specially developed for this study.
Results: It is expected that the Pilates exercise program will be feasible for pregnant women, from early to late stages of pregnancy, and that it will have positive effects on the evaluated clinical outcomes. Additionally, the economic evaluation will allow for identification of the economic impact that pregnancy, with or without musculoskeletal complaints, has on both the pregnant woman and the health system.
Conclusion: This study will assess the feasibility of a Pilates exercise program throughout the entire gestational period, as well as measure of clinical and economic outcomes for conducting a randomized controlled trial with economic evaluation.
Implications: The results of this pilot study will indicate whether it is feasible to conduct a randomized controlled trial for the prevention of musculoskeletal complaints in pregnant women, focusing on important clinical outcomes for this population.
Keywords: Pilates, Pregnancy, Pilot study

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: This study has been approved by the Ethics in Health Committee of Cruzeiro do Sul University (CAAE 59486822.3.0000.8084).

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EFFECT OF MANUAL THERAPY PROTOCOL ON TENSION HEADACHE: CASE REPORT

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Background: Tension headache is the result of a stress process leading to excessive tension of the muscles around the skull with consequent pain and difficulty during daily life activities, this pain can be described as a pain in heaviness, tightness, or pressure. Among the different therapeutic approaches in tension headaches, manual therapy is easy to apply and has great acceptance by patients.
Objectives: To analyze the effect of a manual therapy protocol on the pain of a subject with tension headache.
Methods: It is characterized as a longitudinal, descriptive, and exploratory case report. The subject, male, 34 years old, was evaluated using the following instruments: digital algometer (JTech Commander Algometer®, USA) which tested the pain points of the muscles: upper trapezius, levator scapula, sternocleidomastoid, splenius head and neck bilaterally. In sequence, the Visual Analog Pain Scale (VAS) and the Headache Impact Test (HIT-6) were applied. The evaluation took place before and after 8 treatment visits using the positional inhibition technique. The treatment was carried out for 4 weeks, 2x a week, lasting 45 to 60 minutes each session.
Results: There was an improvement in the individual's ability in their functional activities evidenced through the HIT-6, in which before the consultations it was 23 points, and it increased to 13 points after 8 consultations; reduction in pain by VAS from 7 to 4 after 8 consultations. Through the measurement with the algometer, it was possible to observe that there was a reduction in the pain threshold in practically all the muscles evaluated when compared before and after the 8 treatments, with a greater emphasis on the right upper trapezius muscle (from 1,691 to 3,283) and left (from 2,223 to 3,398) increasing the pain threshold by practically 100%; In the levator scapulae muscle, a significant improvement was observed mainly on the right side (from 2,277 to 3,292), while on the left side (from 2,502 to 2,819); In the splenius muscle of the neck, the values on the right side (from 1475 to 2019) and on the left side (from 1657 to 1854); In the splenius capitis muscle it was possible to see that on the right side (from 1,991 to 3,730) while on the left side there was a reduction in the pain threshold (from 2,923 to 2,520); in relation to the right sternocleidomastoid muscle it increased (from 1,537 to 1,116) and on the left side (from 1,291 to 1,423).
Conclusion: It was found that the manual therapy technique after 8 weeks promoted a reduction in the pain of patients with tension headaches and improved the individual's ability in their functional activities.
Implications: The manual therapy technique seems to have been beneficial in the present case study, however further studies are needed to verify the effect of the duration of the technique, and its effectiveness in a larger sample.
Keywords: Musculoskeletal manipulations, Tension-Type Headache, Manual therapy

Conflict of interest: The authors declare no conflict of interest.
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EVIDENCE-BASED PRACTICE (EBP) COURSE IN UNDERGRADUATE PHYSICAL THERAPY PROGRAMS IN PRIVATE HIGHER EDUCATION INSTITUTIONS IN BRAZIL

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Background: Evidence-based practice (EBP) is fundamental for effective healthcare delivery, and it's teaching has been progressively adopted in higher education in health sciences worldwide. In Brazil, private higher education institutions (HEIs) play a significant role in health education, and although national curriculum guidelines recommend decision-making based on scientific evidence, there are no specific guidelines for the curriculum implementation of EBP as a course. The presence of EBP as a component of the curriculum in undergraduate physical therapy programs in these institutions is still unknown.
Objectives: To investigate the presence of EBP-specific-course in undergraduate physical therapy programs in private HEIs in Brazil and the content offered in the courses.
Methods: This is a cross-sectional study that used the e-MEC National Register of Higher Education Courses and Institutions to search for undergraduate physical therapy programs recognized by the Ministry of Education, until March 2021. Curricula of face-to-face undergraduate programs that provided curriculum information via website or e-mail were included for analysis. Curricula that contained references, mentions or citations of exact term or synonymous to "Evidence-based clinical practice" were analyzed to identify the course in which the content was offered. Subsequently, the available syllabus of EBP specific course were analyzed to identify terms related to the five steps of EBP (Ask, Acquire, Appraise, Apply, Assess) Descriptive analysis was performed using absolute and relative frequencies. Mean and standard deviation were used to report the workload of EBP course.
Results: A total of 1033 regular undergraduate physical therapy programs were found on the Ministry of Education website. Out of these, 809 curricula were included and evaluated. A total of 739 (91.3%) programs were identified as private HEIs. Nearly half of the programs (352/47.6%) are located in the Southeast region of the country. Only 66 (8.9%) programs had an EBP-specific course, offered mainly in the fifth year (30/46.9%) and fourth year (20/31.3%) of the undergraduate program, with an average workload of 44.3±11.8 hours. Proportionally, a higher number of EBP courses are located in the Northern region (10/22.2%) and Northeast region (29/16.6%). Only five (7.6%) programs provided the complete syllabi. All programs mentioned the critical appraisal and application steps, 4 (90%) mentioned the acquire step, 3 (60%) mentioned the ask step, and Only 2 (40%) mentioned the evaluation step.
Conclusion: The presence of EBP-specific course in undergraduate physical therapy program in HEIs is still inadequate, and the majority of programs that include them do not fully incorporate all of their steps. The deficiency in teaching content related to EBP at the undergraduate level can negatively impact the clinical decision-making of new professional and the healthcare delivery.
Implications: The results of this study promoted the understanding of the scenario of EBP teaching in undergraduate physical therapy programs in HEIs of the country, revealing the need for curriculum adjustments to promote evidence-based practice.
Keywords: Curriculum, Evidence-Based Practice, Undergraduate Physical Therapy Program

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Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Amapá (protocol 4.763.025).

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PROFILE AND OPINION OF HEALTH PROFESSIONALS ON THE USE OF THE INTERNATIONAL CLASSIFICATION OF FUNCTIONALITY IN THE HOSPITAL FIELD

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Background: The International Classification of Functioning, Disability, and Health (ICF) was created with the intention of providing a detailed assessment of functioning, ease of recording, and communication between the team.
Objectives: To describe the profile and opinion of health professionals about the use of the ICF in the hospital environment.
Methods: This is an observational, descriptive, cross-sectional study, carried out with Brazilian health professionals who work in the hospital environment. Individuals not residing in the country and unfinished surveys were excluded. An online survey was applied via an electronic form consisting of 22 questions divided into 3 sections: characteristics of the guides, knowledge, and use of the ICF. Questions related to age, gender, trail area, maximum title, length of experience, knowledge, and use of the ICF were defined for the professionals' profiles. Professionals who know the ICF were divided into two groups (1- already used the ICF in the hospital environment; 2- never used it) to compare their profiles and opinion on the feasibility of using the ICF in the hospital environment. A descriptive analysis of the data was performed, with values expressed as median (25-75% percentile) and absolute (n), and relative (%) frequency using the SPSS Software version 22. For comparison and association, the Chi-square was used with a significance level of 5%.
Results: 510 health professionals participated in the study, 427 (83.7%) female. Of these, 316(62%) were nurses, 147(28.8%) were physiotherapists and 27(5.3%) were psychologists. As a maximum degree, 301 (59%) have specialization. 103(20.2%) worked in the hospital environment between 6 and 10 years, 101(19.8%) for more than 20 years, and 89(17.5%) between 2 and 5 years. Regarding knowledge of the ICF, 265 (52%) reported having prior knowledge. To assess knowledge of the ICF, of these 265 who know it, 49 individuals who did not respond about the feasibility of using it were excluded, leaving 216. Of those who know the ICF, 72 (33.3%) have known it for about 2 to 5 years, 73(33.8%) knew it during graduation and 87(40.3%) classified their knowledge as fair. Comparing groups 1 and 2, there was no significant difference in age, sex distribution, knowledge about core sets, the feasibility of using the ICF, and time of practice ($p<0.05$). However, a significant part of group 2 had never been trained to apply the ICF [group 2, 94(79%) versus group 1, 47(48.5%), $p<0.001$] and did not use the core sets [group 2, 115 (96.6%) versus group 1, 69(71.1%), $p<0.001$].
Conclusion: Most professionals who responded to the survey were nurses. Most of the interviewees have specialization as their maximum degree and have been working in the hospital environment for

more than 6 years. Among individuals who know the ICF, there was no significant difference regarding the feasibility of using it, in a comparison between those who used it and those who never used the ICF in the hospital environment. Of those who have never used it in the hospital environment, most have never been trained to apply it and do not use the core sets.
Implications: Knowledge about the profile and opinion of health professionals on the use of the ICF in the hospital environment.
Keywords: International Classification of Functioning, Disability and Health, Health professionals, Health assessment

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To all the researchers responsible for the study, to the professionals who answered the survey and to CAPES.
Ethics committee approval: Approved by the Ethics Committee for Research with Human Beings (CEPSH) of UFSC, CAAE n° 40382520.5.0000.0121.

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ASSOCIATION BETWEEN CLINICAL PARAMETERS OF SARCOPENIA AND COGNITIVE IMPAIRMENT IN OLDER PEOPLE: CROSS-SECTIONAL STUDY

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Background: Sarcopenia and cognitive impairment are worrisome age and public health-related problems due to the high risk of functional decline, hospitalization and death. Sarcopenia is a muscle disease identified by clinical parameters of low muscle strength and muscle mass which, when added to poor physical performance, characterize severe sarcopenia. Cognitive impairment is the decline in normal functioning of one or more brain functions, affecting the activities of daily living (ADLs) of individuals, and may present as a mild or major cognitive disorder.
Objectives: To investigate the association of clinical parameters of sarcopenia with cognitive impairment in elderly people.
Methods: Cross-sectional study, with 263 elderly people (≥60 years old) users of a public specialized care service. Sociodemographic and clinical variables characterized the sample, and the clinical parameters of sarcopenia (strength, muscle mass and physical performance) were evaluated, respectively, using Handgrip Strength (HGS), calf circumference (CC) and the *Timed Up and Go* (TUG). The Mini Mental State Examination (MMSE) was used to assess cognitive status. Associations were investigated by simple and multiple linear and logistic regressions considering clinical parameters of sarcopenia (independent variables) and cognitive status (dependent variable), adjusted for age, gender, years of schooling, number of medications, nutritional status and functional capacity.
Results: Of the participants with cognitive impairment, 59.6% had low muscle strength. Cognitive status was explained by muscle strength in 21.5%, muscle mass in 12.3% and physical performance in 7.6% in simple linear regression analyses, maintaining strength and muscle mass as explanatory variables of the cognitive state in unadjusted multiple analyzes and only muscle strength when adjusted (OR=0,846; [95%CI: 0,774 – 0,924] $p<0,001$). Only strength remained significantly associated with cognitive status in the adjusted multiple logistic regression (OR=0.846; [95% CI: 0.774 – 0.924]; $p<0.001$).
Conclusion: Low muscle strength was the sarcopenia parameter independently associated with cognitive impairment.
Implications: This information is useful to pay attention to the probability of cognitive impairment when low muscle strength is identified in older people.
Keywords: Aged, Sarcopenia, Cognitive Impairment

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Research Ethics Committee of the Faculty of Ceilândia of the University of Brasília (UnB) – CEP/FCE (Opinion 3.650.491).

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COMPARISON OF GAIT SPEED, ISOKINETIC MUSCLE FUNCTION AND MUSCLE MASS AMONG NORMOTENSIVE AND HYPERTENSIVE OLDER ADULTS

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Background: Many studies have investigated the relationship between hypertension and its association with muscle health, showing controversial results on the subject. It is believed that high blood pressure can reduce the blood supply and cause damage to the arteries that supply areas of the motor cortex, responsible for muscle contraction and mobility, leading to a decay of functionality and reduced oxygen consumption and muscle strength. However, during aging there is a natural decrease in muscle mass, strength and quality, associated with the process of sarcopenia, although there are still difficulties identifying which factors are responsible for causing and worsening this process. In this context, it is believed that hypertension may play an important role in understanding this issue.
Objectives: compare isokinetic muscle function, muscle mass and gait speed among normotensive and hypertensive older adults.
Methods: A cross-sectional observational study was conducted with 81 community-dwelling older adults selected by convenience. Participants were older people capable of walking without assistance and without cognitive alterations detectable by the Mini-Mental State Examination (MMSE). The diagnosis of arterial hypertension (independent variable) was made through the self-report of the participant's previous medical diagnosis of arterial hypertension, validated by the record of using antihypertensive medication. The dependent variables of the study were: peak torque, muscle power, work by body weight and agonist-antagonist ratio of hip, knee and ankle (isokinetic dynamometry), handgrip strength (handgrip dynamometry), muscle mass (calf circumference) and usual gait speed at 10 meters. The dependent variables were compared between the groups of normotensive and hypertensive older adults by means of simple analyses and covariance adjusted for sex.
Results: most participants were female (51.9%), active (53.1%) and hypertensive (74%). In the simple analyses, it was observed that the hypertensive older group presented lower handgrip strength, lower mean peak torque of hip extensors and knee flexors, lower muscle power of knee flexors and extensors, lower work by body weight of hip flexors and knee extensors and lower knee agonist-antagonist ratio. However, in the analysis of covariance adjusted for sex, only in the knee agonist-antagonist ratio was found a statistically significant difference between the groups (40.64±9.01 vs 45.78±7.34; p=0.040).

Conclusion: The study identified a lower knee agonist-antagonist ratio in hypertensive older adults when compared to normotensive patients. Our findings are linked to changes in muscle functioning that reflect uncoordinated activation of knee agonists and antagonists, although such changes cannot be fully explained by a significant reduction in strength.
Implications: The understanding of hypertension and its impacts on muscle health contributes to a better understanding of the factors that cause and worsen the decline of muscle function in the older adults, in addition to being a potential contributor to the planning of health care strategies for the older people with a focus on the prevention and correct prescription of physical exercises.
Keywords: Aged, Hypertension, Muscle Strength

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: The authors thank the support of the University of Brasília - Faculty of Ceilândia -, FAPDF and the permission of all participants.
Ethics committee approval: Research Ethics Committee of the Federal University of Minas Gerais — CEP/UFMG (Opinion 492/07).

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SLEEP QUALITY NEGATIVELY IMPACTS THE BALANCE OF ELDERLY PEOPLE WITH PARKINSON'S DISEASE

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Background: Parkinson's disease (PD) is a progressive neurodegenerative disorder that affects more than 1% of people over 55 years of age. It is characterized by motor symptoms such as postural instability and increased risk of falls, and non-motor symptoms such as sleep disorders. Consequently, detailed evaluation and adequate management of these symptoms in this population, which is often underestimated, is extremely important.
Objective: To correlate sleep quality with balance and risk of falls in elderly with PD.
Method: Cross-sectional study composed by 22 elderly individuals with PD. To assess sleep quality, the Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS) was used. To assess the risk of falls, FES-I was used. Postural control was assessed using the force platform (also associated with the dual task using the Strop test). To analyze the correlations between the variables, the Spearman correlation test was performed, considering $p < 0,05$.
Results: In the evaluation of sleep quality (PSQI) vs balance, correlations were observed between the domains: sleep duration, sleep quality and medication use. Regarding the sleep duration domain, there was a significant negative correlation in the tandem open eyes (OE) positions in the variables: COP area (r = -468 P = .028), AP amplitude (r = -, 738 P = .000), ML amplitude (r = -, 527 P = .012), AP velocity (r = -, 588 P = .004) and ML speed (r = -, 444 P = .039), tandem closed eyes (CE) in the variable: AP amplitude (r = -, 545 P =, 009) and tandem of the variable: AP amplitude (r = -645 P =, 001) and ML velocity (r = -, 453 P =, 034). Compelling negative correlation was found in the tandem OE and tandem CE postures in the ML velocity variable, (r = -, 514 P =, 014 and r = -, 543 P =, 009) respectively. In the evaluation of excessive daytime sleepiness vs balance there was a significant negative correlation in tandem OE and tandem CE, in the velocity variable ML, (r = -, 514 P = .014 and r = -, 543 P = .009) respectively.
Conclusion: Sleep quality and excessive daytime sleepiness are negatively correlated with balance in elderly people with PD, since the performance of these individuals in the applied tests were worse. There was no significant correlation between the risk of falls and balance in these individuals.
Implications: This study contributed to the understanding of the relationship between sleep and balance, thus a holistic preventive evaluation and effective therapeutic measures continue to be extremely decisive when managing these symptoms, for improvement in the functional autonomy and social participation of this population.
Keywords: Parkinson's Disease, Sleep, Balance

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Research Ethics Committee of the State University of Londrina (UEL), under approval opinion CEP-UEL n° 2.289.247.

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EVALUATOR TRAINING DOES NOT INFLUENCE THE REPRODUCIBILITY OF OBSERVATIONAL METHODS FOR ANALYZING BIOMECHANICAL EXPOSURE

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Background: The application of observational methods is evaluator dependent, and it is common for professionals working in the field of Occupational Health to apply them without any previous training. This can compromise or invalidate the evaluation results, as professionals can make serious mistakes when applying them without prior training.
Objectives: to assess whether the reproducibility of the QEC, REBA, RULA and SI methods is influenced by the evaluator's experience and training and to identify whether the evaluator's training modifies the reproducibility of the methods; and to evaluate the evaluators' perception about the use of observational methods in pre and post training.
Methods: This is a study of measurement properties. The study population consisted of analyzing 50 workers with different occupations whose work tasks were filmed for analysis by 11 evaluators, with different levels of experience in using the observational methods of the QEC, REBA, RULA, and SI methods used for analysis in the pre- and post-training. The training of evaluators for the application of observational methods was carried out in 4 modules. The total duration of the training including the modules and practical activities was 30 hours.
Results: There was moderate inter-rater reproducibility, both pre- and post-training, regardless of knowledge of the methods. The training effect was low. The impression about the use of the methods when evaluating working conditions showed that, in general, the QEC and RULA method was considered the easiest to understand, interpret and use with only the instructions for use, by the

most experienced evaluators, followed by those with more experience. moderate experience, while the inexperienced preferred the QEC and the REBA. The SI is the method considered the most difficult by all evaluators in pre-training. After training, the evaluators somewhat maintained their trends towards the easier pre-training methods, although they improved their impression of the SI, previously considered more difficult.
Conclusion: The conclusion of this study is that the evaluators do not agree with each other. The training of evaluators to use explicit observational methods interferes little with the identification of exposure to biomechanical risk in the occupational environment and has not shown an effect on changing the evaluation of occupational exposure for inexperienced evaluators, with moderate experience and experts.
Implications: By evaluating the need and influence of training for the use of observational methods of analysis of biomechanical exposure, we contribute to improving them by knowing the results of measurement properties.
Keywords: Ergonomics, Occupational Health, Risk assessment

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Research Ethics Committee of Universidade Cidade de São Paulo - UNICID No 3.518.864.

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SOCIODEMOGRAPHIC AND UROGYNECOLOGICAL PROFILE OF WOMEN ASSISTED IN THE PHYSIOTHERAPY SERVICE AT THE FEDERAL UNIVERSITY OF PARÁ

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Background: Urogynecological dysfunctions represent deficits in the functionality of the pelvic floor muscles (PFMs). Among these comorbidities, urinary incontinence is the involuntary loss of urine and affects about 50% of women at some point in life, with increasing incidence in advanced age in women under 65 years old, stress urinary incontinence is a little more common, while women over 65 are more likely to have mixed incontinence. Deficient or inadequate function of PFMs is one of the etiological factors for urinary incontinence, directly impacting the quality of life and sexual quality in women. Pelvic organ prolapse (POP) is defined as a protrusion or herniation of the pelvic organs through the vaginal walls and pelvic floor. It affects women between 20-29 years old about 6%, while women aged 50-59 years old represent 31% with POP and 50% of women with POP are 80 years old or older.
Objectives: To describe the profile of patients assisted by physiotherapy in women's health in the proposed unit and to identify the main pathologies that most affect this population.
Methods: This is a cross-sectional study. All participants signed the Informed Consent Form (TCLE). The sample consisted of women with urogynecological disorders referred by doctors from hospitals and units of the Unified Health System (SUS) or sought the physiotherapy service at CASMUC, in the period 2022-2023.
Results: A total of 32 patients were admitted and treated at the outpatient clinic during the period. As for the sociodemographic profile, there was a higher prevalence of elderly women (60 years old or more) (31.3%), single (37.5%) with housewife occupation (28.1%). It appears that in the sample most of the patients went through 2 or 4 pregnancies (25% each). Therefore, this multiparity leads them to a greater risk of urogynecological dysfunctions due to the weakening of the MAP. Regarding urogynecological disorders, based on medical diagnosis, 21.9% had stress urinary incontinence, 18.8% mixed urinary incontinence, 12.5% pelvic organ prolapse, and 15.6% mixed urinary incontinence associated with pelvic organ prolapse.
Conclusion and Implications: This study allowed us to trace the sociodemographic and urogynecological profile of patients undergoing physiotherapeutic care at CASMUC, like others reported in the literature, being elderly women, housewives, multiparous with a predominance of stress urinary incontinence and with a medium level of education.
Keywords: Physiotherapy, Women's Health, Profile

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Pará (UFPA) under Opinion Number: 4,393,793

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EFFECTS OF GRADED EXERCISE ON HYPERALGESIA IN PATIENTS WITH KNEE OSTEOARTHRITIS. PRELIMINARY RESULTS

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Background: People with knee osteoarthritis (KOA) usually present pain sensitization, which impacts the experience of pain and predicts reduced quality of life and low responsiveness to treatments. A graded exercise has been proposed for the treatment of KOA. In this proposal, the practice of physical exercise should be within the individual possibilities, with the potential to remove the fear of exercising and thus create an adequate physical activity routine.
Objectives: This study aimed to investigate the effects of graded exercise on hyperalgesia in people with KOA compared to an educational control group.
Methods: Participants with primary symptoms of pain ($\geq$ 4 on a 0-10 scale) and clinical diagnosis of KOA were recruited. After explanations about the procedures, they signed a consent form and were assessed at baseline and after the intervention. Anthropometric data and pressure pain threshold (PPT) in the center patella at the more symptomatic knee were collected. Three measurements were performed with an algometer (ITO-2020, Japan), with the 30s the intervals between measurements. The mean of them was used for statistical analysis. The participants were randomly assigned to 2 groups for the 14 weeks of intervention: The exercise group and the Education group. The Exercise group performed exercises 3 times a week and had individualized progression of the duration and intensity of the exercise. The session duration initially was of 15-25 minutes and in the end of the intervention of 55 minutes. The participants of exercise group were contacted weekly for evaluation of progress and referral of exercise videos. The educational group also was contacted weekly to clarify doubts. Both groups received educational materials and participated in lectures with health professionals. Two-way ANOVA SPSS (Statistical Package for the Social Science 26.0) was used to compare differences between groups using group-versus-time interaction analysis (significance of 5%).

Results: The study included 27 participants, mostly women (66.7%), mean age of 59,78 years (±9.81) and a mean baseline PPT of 4.2Kgf (±1.40). The two-way ANOVA analysis indicated an increase in the PPT in the Exercise group, compared to the Education group, in the interaction between the group and time factors ($P<0.05$). The analysis indicated no difference between the groups at baseline ($P>0.05$).
Conclusion: The graded exercise was effective in reducing hyperalgesia in patients with KOA. Future research about the effects of graded exercise in other pain processing measures and with a larger number of participants must be done to confirm this preliminary conclusion.
Implications: Graded exercise is an effective tool for reducing hyperalgesia in people with KOA and can be used to reduce pain sensitization in this population.
Keywords: Knee osteoarthritis, Hyperalgesia, Exercise

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COLOPROCTOLOGICAL SYMPTOMS IN PARALYMPIC SPORTS ATHLETES: A PILOT CROSS-SECTIONAL PREVALENCE STUDY IN THE NORTH REGION

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Background: Paralympic sports is a sports practice adapted for people with disabilities, who, due to exposure to the overload generated by training and competitions, become susceptible to health problems in sports, and the pelvic floor may have its functionality compromised, resulting in various dysfunctions such as coloproctological, characterized by changes in anorectal physiology, such as anal incontinence and constipation symptoms.
Objectives: To verify the prevalence of pelvic floor dysfunctions in athletes of paralympic sports.
Methods: Observational epidemiological research of a quantitative and descriptive cross-sectional nature, carried out with athletes of paralympic sports of any modality; data collection was by electronic forms using the Google Forms tool, the form was divided into sections: Presentation of the research in video along with Informed Consent Form (ICF), sociodemographic data, obstetric data, use of ostomies and validated questionnaires (Cleveland Clinic Florida Fecal Incontinence Score (CCFFIS), Bristol Scale and Rome III Criterion); initially with a pilot survey, initially tested in the North Region, in Belém do Pará, locality that resides its researchers, being part of a national research. Data were transferred from the platform to Excel 2019, tabulated, and a descriptive analysis of coloproctological symptoms was performed.
Results: The pilot research had 7 volunteers of both sexes (3 female participants and 4 male participants), aged 37±9.18 years, self-declared black, heterosexual, all of them people with physical disabilities, from 5 different modalities (sitting volleyball, judo, basketball, fencing, and wheelchair dancing), residents of the Metropolitan Region of Belém. Regarding obstetric history, of the 3 participants, only one reported a pregnancy, which evolved into abortion. None of the participants reported the presence of ostomies. The CCFFIS indicated that none of the participants had solid stool losses, however 2 participants indicated liquid stool losses, 4 lost gas/fluids, and 2 used linings to avoid soiling their clothes; furthermore, only 1 indicated a change in lifestyle due to involuntary loss. Regarding the Rome Criterion III, 3 of the participants reported the sensation of incomplete evacuation, besides the evacuation effort reported by 2 participants, as well as the sensation of blocking the exit of stools and hardened stools, and 1 participant reported the use of medication to evacuate and manual maneuvers to get rid of stools. Regarding the Bristol Scale, 4 reported stools with a degree of dryness, 2 with the normality pattern, and 1 reported softer stool.
Conclusion: It is noteworthy that the data presented, even if with a reduced n, indicate the need to describe these symptoms in this population, trace their profile and epidemiological data, and stimulate future interventions that minimize the severity and prevent these dysfunctions.
Implications: There is a large number of paralympic high-performance athletes from the North Region, making this research of great stimulus for prevention and intervention actions initially in loco.
Keywords: Pelvic Floor Dysfunction, Parathletes, Sports for Persons with Disabilities

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To each paratleta that donated their time to participate in our research, to UFPa and CAPES.
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CARDIOVASCULAR HEALTH AND QUALITY OF LIFE OF UNIVERSITY WORKERS

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Background: Cardiovascular diseases are the leading causes of death in the world and the *American Heart Association* (AHA) has established seven metrics that indicate cardiovascular health (CVS). A poor CVS affects health-related quality of life (HRQoL). The university environment presents different activities and may require maintaining postures (sitting or standing) for long periods (secretary and professors) or repetitive effort (cleaning workers).
Objectives: To evaluate the CVH and to associate it with the HRQoL of workers in a university environment.
Methods: This is a cross-sectional observational study carried out with workers at a higher education institution. The study included 121 workers aged between 18 and 59 years who had been effective for at least six months. Those with a clinical diagnosis of cardiovascular disease or those who did not complete all stages of the study were excluded. The sample was recruited for convenience. CVH was assessed following the AHA recommendations using seven metrics, four of which were behavioral (diet, level of physical activity, smoking and body mass index) and three were biological (fasting glucose, total cholesterol and systemic blood pressure) and classified as poor, intermediate and ideal. After computing the metrics a score is generated. To assess the level of physical activity and diet, the International Physical Activity Questionnaire and the Mediterranean Diet Questionnaire were used, respectively. The *Short Form – 36* (SF-36) was used to assess HRQoL and the physical (PC) and mental (MC) components were computed. Data normality was tested using

the *Kolmogorov-Smirnov* test. Comparison between CVH groups was performed using the *one-way ANOVA* test with *Tukey's post hoc* (symmetrical distribution) and the *Kruskal-Wallis* test for independent samples with *Dunn's post hoc*. Multiple linear regression verified the relationship between the CVH score and the HRQoL domains, with data adjusted for sex and age. The *software* used for analysis was the *Statistical Package for Social Science* (SPSS) and the value considered for p was <0.05.
Results: Of the workers, 25.6% had poor CVH, 27.2% intermediate and 47.1% ideal. Workers with poor CVH [46.26 (6.98)] had lower PC HRQoL values when compared to the intermediate [50.34 (6.53), p= 0.036] and ideal group [50.07 (6 .21), p= 0.002]. There was also a positive relationship between the CVH score and the PC [β= 0.068 (95%CI= 0.011 to 0.126), p= 0.020] of HRQoL.
Conclusion: Half of the workers had between poor and intermediate CVH. Those with poor CVH had worse HRQoL on the PC. There was a direct relationship between the CVH score and HRQL PC.
Implications: The use of metrics can be a tool for screening CVH, easy collection and good cost-effectiveness. It is also an opportunity to show workers the importance of physical exercise and proper nutrition.
Keywords: Cardiovascular health, Quality of life, Worker's health

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: We want to thank participating university staff for sharing their valuable time with us.
Ethics committee approval: The study was approved by the Ethics and Research Committee of Universidade Evangélica de Goiás under number 4.512.382/2021.

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COMPARTMENTAL THORACOABDOMINAL VOLUME DISTRIBUTION IN PATIENTS WITH PARKINSON'S DISEASE IN THE OFF STATE OF LEVODOPA USE

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Background: Parkinson's disease (PD) is a neurodegenerative disorder resulting from the death of motor neurons in the substantia nigra and is associated with reduced lung volumes.
Objectives: To analyze the compartmental distribution of thoracoabdominal volumes in PD patients evaluated by optoelectronic plethysmography (OEP) and describe the respiratory function of the sample.
Methods: This is a cross-sectional study in which 16 patients (12 men and 4 women), between 50 and 75 years old, classified in stages 2 to 3 of the Hoehn and Yahr Scale, were evaluated by OEP and spirometry. Data collection was performed at the Cardiopulmonary Physical Therapy Laboratory (LACAP) of UFPE.
Results: In the analysis of the distribution of thoracoabdominal volumes, there was a predominance of abdominal tidal volume compared to the other compartments (VCab% = 0.34 $>$ VCrcp% 0.13 $>$ VCrca% 0.09, with p <0.001). Patients maintained tidal volume (Vt), minute ventilation (Ve), and respiratory rate (RR) within the normal range (Vt 0.54 $\pm$ 0.22 L; Ve 9.198 $\pm$ 3.40 L/min; RR 18.25 $\pm$ 5.73), and forced spirometry yielded an FEV1 (% predicted) of 0.71 $\pm$ 0.17 L and FVC (% predicted) of 0.69 $\pm$ 0.58 L.
Conclusion: The results suggest that in the distribution of thoracoabdominal volumes, there was an abdominal predominance compared to the others. In the respiratory pattern and spirometric variables, patients presented normal ventilation with a predominance of abdominal breathing pattern, despite the presence of longer inspiratory time. Despite the condition of Parkinson's disease, patients without medication therapy and normal respiratory function showed greater ventilation in the abdominal compartment compared to the thoracic compartments.
Implications: Despite normal respiratory function, future studies should elucidate the reasons for the disadvantage of thoracic impairments compared to abdominal impairments in the breathing pattern of these patients. An alternative would be to compare this assessment of the respiratory pattern in patients with medication use.
Keywords: Parkinson Disease, Plethysmography, Physical Therapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: UFPE (Propg), CAPES, CNPq e FACEPE (IBPG - 1976-4.08/22).
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THE INFLUENCE OF FUNCTIONAL CAPACITIES ON THE PARTICIPATION OF ADOLESCENTS WITH CEREBRAL PALSY: PRELIMINARY DATA

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Background: The motor dysfunctions that result in the incapacity and participation limitations in individuals with Cerebral Palsy (CP) are described as adjacent alterations from their pathology. The characterization of daily activities and participation is still little explored and studied in the literature to assist practice. We need to know the characteristics of the participation of adolescents with CP to guide a more assertive clinical practice.
Objectives: To explore associations between the functional level and the frequency of social participation of adolescents with CP.
Methods: Observational cross-sectional study. Adolescents diagnosed with CP, between 12 and 17 years old, without associated cognitive or behavioral changes were assessed. The adolescents were classified by the Brazilian Economic classification criteria ABEP-2022, and regarding the frequency of participation at home, school and community by the *Participation scale and environment Measure for Children and Youth* (PEM-CY) and the functional levels classified by Gross Motor Function Classification System (GMFCS), Manual Ability Classification System (MACS), Communication Function Classification System (CFCS), Eating and Drinking Ability Classification System (EDACS) and Vision Function Classification System (VFCS). Data were analyzed descriptively and through Spearman correlations, using the Statistical Package for Social Science.
Results: 10 adolescents were evaluated, 5 boys and 5 girls, with a mean age of 13.90 ($\pm$1.79). Regarding socioeconomic status, measured by ABEP, 3 (30%) of the adolescents were classified as B2, 3 (30%) as C1 and 4 (40%) as C2. Classifications of functional levels were: GMFCS level I = 4 (40%), II = 1 (10%), IV = 3 (30%) and V = 2 (20%); MACS level I = 4 (40%), II = 3 (30%) and IV = 3 (30%); CFCS level I = 2 (20%), II = 3 (30%), III = 4 (40%) and IV = 1 (10%); EDACS level I = 4

(40%), II = 2 (20%), III = 2 (20%), IV = 1 (10%) and V = 1 (10%); and VFCS level I = 7 (70%), II = 2 (20%) and III = 1 (10%). Significant negative correlations were found between GMFCS levels and the frequency of participation at school (rho = -0.72; r^2 = 0.34; p-value = 0.01). No significant correlations were observed between participation and functional levels of MACS, EDACS, VFCS, CFCS.
Conclusion: These preliminary data may indicate a tendency that the better the gross motor function (GMFCS) the better the frequency of participation in activities in the school environment for adolescents with CP. These results suggest that better motor skills may facilitate activities in the school environment.
Implications: Knowledge about the influence of functionality on the participation of adolescents with CP is essential to guide individualized and family-centered clinical practice. Furthermore, it is essential to verify the influence of factors related to the body function and levels of frequency in social participation experienced by these individuals in different environments.
Keywords: Cerebral palsy, Functionality, Social participation

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Ethics committee approval: Universidade Federal de São Carlos (CAAE:64919722.9.0000.5504).

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EVALUATION OF ONCOLOGICAL PATIENT MOBILITY WHO HAVE PERFORMED OR NOT A PREOPERATIVE PHYSIOTHERAPEUTIC INTERVENTION — OBSERVATIONAL STUDY

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Background: the importance of assessing patient mobility has been described in the literature. Recognition of low mobility on admission or declining mobility status during hospitalization should lead to early involvement by staff, including physiotherapists. It is important to know the level of functional capacity in the short and long term, after the surgical procedure, so that it is possible to adequately direct the health care that goes beyond the clinical solution of the disease, prolonging the desired functional recovery.
Objectives: to describe the mobility index assessed on the first postoperative day, according to the JH-HLM scale, in cancer patients who underwent preoperative physical therapy intervention or not.
Methods: observational, retrospective study with a quantitative approach. Sociodemographic and clinical data as well as mobility data were obtained from the electronic database of the physiotherapy service of the surgical clinic of the Hospital Universitário de Brasília and confirmed in the electronic medical record available in the Management Application for University Hospitals (AGHU). The mobility assessment was performed using the Johns Hopkins Highest Mobility Scale (JH-HLM).
Results: the study sample consisted of seventy-six patients, most women (76.31%), with a mean age of 56.44 years. In the comparison between the groups, at the time of the postoperative period, there was a significant difference (p = 0.029) in the mobility of the group that underwent preoperative physiotherapy (mean 7.3; median 8; interquartile 6.5-8) and the group who did not undergo preoperative physiotherapy (mean 6.09; median 7; interquartile 5-8).
Conclusion: the group that underwent preoperative physiotherapy had a higher mobility index than the group that did not undergo this intervention.
Implications: Based on the positive result of the physical therapy intervention in the preoperative period on the mobility index of patients, it is possible to implement a structured protocol for monitoring surgical patients at different times during their hospitalization, providing better functional results until discharge.
Keywords: Physical therapy, Oncology, Mobility

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: The study was approved by the Human Research Ethics Committee of the Ceilândia Faculty of the University of Brasília (3,022,045), in accordance with ethical standards of norms and regulatory guidelines for research involving human beings, in accordance with Resolution 466, of 2012, of the National Health Council.

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INFLUENCE OF LIFESTYLE ON CARDIORESPIRATORY FITNESS OF UNIVERSITY STUDENTS

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Background: The relationship between lifestyle and cardiorespiratory fitness (CRF) has been extensively studied in adults, with evidence indicating that CRF is associated with a lower risk of physical and mental health problems[1–3]. However, this relationship is still not clearly established for university students and most studies in this area have not explored how different aspects of lifestyle can affect cardiorespiratory fitness in the young population[4]. In view of this, understanding how different aspects of lifestyle are associated with ACR can be useful for the development of interventions aimed at promoting the health and well-being of this population.
Objectives: The objective of this study was to evaluate the associations between lifestyle components and cardiorespiratory fitness in university students.
Methods: The research used a quantitative cross-sectional observational method with a sample of 139 university students (53% women), with a mean age of 23 $\pm$ 6 years. To assess lifestyle, the instrument The Short Multidimensional Inventory Lifestyle Evaluation (SMILE-C)[5] was used. Cardiorespiratory fitness was assessed using the 20m Shuttle Run test6, which is a valid measure to estimate the ACR in the young population[4]. Statistical analysis was performed using a univariate general linear model to assess the contribution of each lifestyle component to cardiorespiratory fitness. The significance adopted was $p<0.05$. All analyzes were performed using SPSS Version 27.0 software.
Results: The results demonstrated that lifestyle was a significant predictor (F (7, 131) = 3.472; p=0.002; R^2=0.15), explaining approximately 15% of the variation in cardiorespiratory fitness. However, the results for each specific lifestyle component were different. Physical activity showed a significant positive relationship with cardiorespiratory fitness (β= 0.55; CI 95%= 0.12, 0.98; p=0.013;

R^2=0.04), while social support (β= -0.37; CI 95 %= -0.62, 0.12; p=0.004; R^2=0.06) and environmental exposure (β= -0.63; 95%CI= -1.08, -0.18; p=0.006; R^2=0.05) showed a significant negative relationship. In contrast, no significant associations were found between cardiorespiratory fitness and other lifestyle components (diet and nutrition, substance use, stress management, and restorative sleep).
Conclusion: This study provides evidence indicating that different aspects of lifestyle are associated with cardiorespiratory fitness in university students. Physical activity, social support and environmental exposure were identified as important factors for promoting cardiorespiratory fitness in this population.
Implications: The findings of this study can be applied in creating specific intervention programs aimed at improving the cardiorespiratory fitness of university students, including promoting regular physical activity and improving environmental exposure and social support. In addition, knowledge of these factors can also be used by health professionals to guide and encourage students to adopt a healthier lifestyle, thus improving the health and well-being of this population.
Keywords: Lifestyle medicine, Physical aptitude, University students

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Acknowledgment: Not applicable.
Ethics committee approval: The present study was approved by the Ethics Committee in Research with human beings of the Federal University of Pará, according to approval n° 55481422.5.2002.5346.

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HOME ENVIRONMENT AFFORDANCES AND GROSS MOTOR SKILLS OF INFANTS WITH BIOLOGICAL RISK BEFORE AND AFTER SIX MONTHS OF LIFE

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Background: Affordances refer to the interrelation between the individual's capacities and the properties of the environment, promoting the opportunity to perform an action. Thus, the home environment: adequate physical space, quality in the variation of stimuli, and diversity of toys can be affordances that facilitate motor development in the first years of life. However, the impact of this relationship before and after the 6th month of life, a period of major developmental changes, is unknown.
Objectives: To compare home environment affordances and gross motor skills in two groups of infants with biological risk (2-6 months and 6-11 months) and verify the relationship between these variables in each group.
Methods: Observational, cross-sectional, and remote study. Fifty-three infants with biological risk for developmental delay (prematurity, low birth weight, neonatal intensive care unit admission) participated. Group 1: 2-6 months and 15 days (M=3.95 months; SD=23 days); and group 2: 6 months and 15 days-11 months (M=7.89 months; SD=37 days). Gross motor skills were assessed by the Alberta Infant Motor Scale (AIMS) using asynchronous home videos. The Affordances in the Home Environment for Motor Development - Infant Scale (AHEMD-IS) was applied using an online form, and the raw score of each dimension was recorded: Physical space, variety of stimulation, gross and fine-motor toys. Means comparison tests were performed for comparison between groups (test t and Mann-Whitney test, according to the distribution of each variable), and multiple linear regression (predictors: 4 dimensions of the AHEMD-IS; outcome: percentile of the AIMS) to each group, considering $p \leq 0.05$.
Results: The groups did not show significant differences in AIMS, physical space, and variety of stimulation. In contrast, group 2 showed significantly higher results in the dimensions of gross and fine-motor toys. Group 1 showed no significant association between affordances and gross motor skills. Group 2 showed significant associations (p=0.005; r^2= 0.444), in which the variety of stimulation (p=0.007) and gross-motor toys (p=0.015) explained 44.4% of the variation in the AIMS percentile.
Conclusion: Greater quality of stimulation at home and greater presence of gross-motor toys impacted motor skills in infants older than 6 months. These results are possible due to the fact that older infants have more motor skills and thus explore the environment more, in addition to having more toys, which possibly stimulates the motor skills assessed by the AIMS.
Implications: Identifying differences between the 2 groups, especially regarding the smaller amount of toys used at home for younger infants, and the association of variety of stimulation and skills for older infants, indicates the need to emphasize early family-oriented practices with a focus on environmental enrichment.
Keywords: Risk factors, Motor skills, Home environment

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ANALYSIS OF POSTURAL STABILITY OF AMPUTE INDIVIDUALS EVALUATED BY FUNCTIONAL TESTS AND BAROPODOMETRY: ONE COMPARATIVE STUDY WITH NON-AMPUTEE INDIVIDUALS

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Background: Individuals with lower limb amputation may have limitations in carrying out their activities of daily living due to the deficit of body balance, due to the loss of the limb, they need to develop compensatory strategies to neutralize the postural changes that can result in significant barriers to community participation, quality of life, osteoarticular complications in the residual and contralateral joints with increased risk of falling.
Objectives: To compare the static and dynamic balance between amputee and able-bodied subjects.
Methods: Cross-sectional observational study, consisting of 15 individuals with unilateral transfemoral amputation using a prosthesis for at least 6 months and 15 non-amputee individuals who composed the control group. Dynamic balance was assessed using the Berg Balance Scale (BBS) and the Short Physical Performance Balance (SPPB), baropodometry was used to assess static balance in the standing posture with eyes open, with no adaptation required, the entire. The evaluation was carried out in the gait laboratory of the

Centro de Reabilitação e Readaptação Dr. Henrique Santillo (CRER), by a trained physiotherapist.
Results: The entire sample of the group of amputees underwent pre and post fitting rehabilitation. The performance of amputees in the dynamic balance score was lower compared to the control group ($p<0.05$). However, the group of amputees showed less oscillation of the center of pressure, in the static examination of baropodometry ($p<0.05$), reflecting a good ability to balance.
Conclusion: Our data suggest that transfemoral amputees have a good static balance, similar to that of people without amputations in the lower limbs, in contrast, despite having a dynamic balance considered good, the performance was significantly lower than that of the control group. As there was a small group of individuals who composed the studied groups, a more expressive sample group can be used in future studies, comparing different levels of amputation.
Implications: The results of this research aggregate information on the subject for interested researchers, using common and accessible tools among scientific research for the assessment of postural stability, which are the Berg Balance Scale, the Short Physical Performance Battery and baropodometry. The results of the study point to the inclusion of early balance training in treatment protocols.
Keywords: Amputees, Postural Balance, Physiotherapy

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Acknowledgment: Not applicable.
Ethics committee approval: State University of Goiás, n° 2.500.124.

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ANALYSIS OF FUNCTIONAL CLINICAL AND PHYSICAL VARIABLES OF HOSPITALIZED ELDERLY PEOPLE

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Background: The hospitalization process can influence a sharp functional decline of the elderly, the reduction of independence and other functional aspects can increase the length of hospital stay with consequent impact on hospital expenses, influencing clinical, physical and mental variables, the functionality of this population can be well understood from the analysis of these variables.
Objectives: This study analyzed the relationship between clinical and physical factors and the functional capacity of hospitalized elderly.
Methods: This is an analytical cross-sectional study that evaluated elderly people in a referral hospital for urgency and trauma in Goiânia. Were used the Functional Independence Measure (FIM), Handgrip Strength (HGS), Medical Research Council (MRC), Berg Balance Scale (BBS), and Visual Analogue Scale (VAS).
Results: 111 elderly people participated, with a mean age of 73 ($\pm$ 6.9) years, with a predominance of females and fractures musculoskeletal disorders including fractures the main reason for hospitalization (59.5%). Most of the elderly (79.3%) showed functional dependence that was associated with age, sedentary lifestyle, presence of musculoskeletal disorders, BBS, FPP and MRC, sedentary lifestyle was also associated with a decrease in HGS and the imbalance assessed by BBS with impairment of global muscle strength assessed by the MRC.
Conclusion: Hospitalized elderly have reduced functional capacity, and the level of independence can be influenced by age, sedentary lifestyle, presence of musculoskeletal disorder, strength and balance.
Implications: The recognition of factors related to the level of activity and participation during hospitalization is necessary in order to reduce the damage caused by the loss of function in hospitalized elderly, directing the physiotherapeutic approach in order to increase independence for daily activities and autonomy of these patients, the research may also serve as an incentive for new studies related to the functional capacity of hospitalized elderly.
Keywords: Gerontology, Aged, Functional status

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Acknowledgment: Not applicable.
Ethics committee approval: Hospital de Urgência de Goiânia Dr. Valdemiro Cruz (HUGO), n° 73957317.5.0000.0033.

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IDENTIFICATION OF ICF CODERS FOR ENVIRONMENTAL FACTORS IN THE NEONATAL ICU

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Background: The Neonatal Intensive Care Unit (NICU) represents an atypical environment that interferes with the relationship between parents and the baby, as well as provides unusual sensory experiences, resulting from frequent procedures that can cause pain, exposure to noise, excessive light, and mechanical ventilation. The International Classification of Functioning, Disability, and Health (ICF) is divided into "Disability and Functioning" and "Contextual factors", which provide a large number of coders through an alphanumeric system in which the letters related to each domain are followed by a code that starts with the chapter number (one digit), followed by the second level (two digits) and the third and fourth levels (one digit each). The ICF can also provide us with a set of coders directed in shorter forms, called CORE SETS or Checklists, which also allow us to classify and evaluate the environmental factors involved in the NICU.
Objectives: To identify the coders of the ICF environmental factors related to the NICU.
Methods: This is a cross-sectional study, carried out from May to September 2021, characterized as an expert survey, based on the guidelines of the World Health Organization and the ICF research department for the development of a CORE SET. Health professionals from different areas, with at least two years of experience in the NICU and/or in research on the subject, were recruited. The professionals answered a virtual form, using the Google Forms platform, with sociodemographic questions and open questions about the environmental factors involved in the NICU scenario. Subsequently, three independent evaluators linked the answers with the categories and domains of the ICF, based on international guidelines.
Results: Fifty health professionals answered the questionnaire during the data collection period. Most were female (94%), with a mean age of 39.30 $\pm$ 9.16 years, 54% were physiotherapists, 22% nurses,

10% nursing technicians, and 10% physicians, with a mean of 15.56 ± 9.36 years of training. The process of linking responses about the NICU environment and the ICF codes generated a total of 33 categories of environmental factors.
Conclusion: Based on the various physical, attitudinal, and social aspects considered as barriers and facilitators by professionals working in NICUs, it was possible to identify 33 categories of ICF environmental factors related to this environment, 14 of them at level 2 and 19 at level 3.
Implications: From the identification of the coders, we can proceed with the next steps of the research to arrive at the final model of an ICF checklist of environmental factors for the NICU. This checklist is essential to understand, classify and evaluate the environmental factors involved in the NICU and to encourage the creation of assessment instruments focused on these aspects.
Keywords: Environmental Exposure, Neonatal ICU, ICF

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Acknowledgment: Not applicable.
Ethics committee approval: Research Ethics Committee of the Faculty of Health Sciences of Trairi – UFRN/FACISA (Opinion n° 4.545.850).

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RELATIONSHIO BETWEEN SKIN TEMPERATURE AND BODY COMPOSITION WOMEN

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Background: Infrared Thermography (IT) is a tool for the investigation of physiological functions through changes in blood flow that are associated with the control of Skin Temperature (Tsk). Tsk depends on extrinsic factors, such as environmental temperature and humidity; and intrinsic factors, such as anthropometric characteristics, circadian rhythm, age and sex. Sex, menstrual cycle, use of exogenous hormones, subcutaneous fat, and metabolic rate can affect female Tsk. Although there are already studies that relate temperature to body fat percentage, there are few inconclusive studies that correlate body composition with skin temperature by specific area.
Objective: To correlate skin temperature and body composition by body segments of women in the physiological menstrual cycle, use of exogenous hormones, and menopause.
Methods: This is a prospective observational study, Participants were 45 volunteers equally allocated into three groups: Exogenous Hormone Group (EHG) [24.53±4.30 years, 58.59±8.46kg, 161.13± 6.67cm] Physiological Menstrual Cycle Group (PMCG) [26.33± 4.83 years, 58.12±10.02kg, 161±5.53cm] and Menopause Group (MG) [57.13±8.79 years, 68.76±15.82kg, 157±7.16cm]. The EHG volunteers use combined oral contraceptives, while the others did not use any other type of medication or hormonal supplementation. To control the circadian rhythm and the phase of the menstrual cycle, all of them underwent segmental body composition measurements (muscle mass and fat in kilograms) using an InBody 120 bioimpedance scale, and skin temperature measurements were made using a FLIR model T-360 camera once a week, at the same time, over a 28-day period. The areas of interest were the breast region, abdomen, trunk, lumbar spine, breech, upper and lower limbs. For correlation analysis between skin temperature and body composition a Pearson correlation test was performed using SPSS, version 21.
Results: There was no significant correlation ($P>0.05$) between muscle mass and skin temperature of the evaluated areas in any of the groups or evaluation times. Regarding to body fatness, it was observed that independently of the phase from the menstrual cycle, the PMCG presented a negative correlation between temperature and trunk fatness (r= -0,780, $P<0,01$) and between upper limbs fatness and breast temperature (r= -0,655, $P<0,01$) and abdomen (r= -0,638, $P<0,01$).The EHG group showed significant negative correlations between body fat and temperature of breast (r=-0,712, $P<0,01$), abdomen (r= -0,701, $P<0,01$), posterior trunk (scapulae region) (r=-0,680, $P<0,01$), right lower limb (r= -0,672, $P<0,01$) and upper limbs (r=-0,686, $P<0,01$). The MG showed only negative correlation (r=-0,591, $P<0,01$) between fat and skin temperature of the posterior trunk.
Conclusion: Skin temperature has an inverse relationship with fatness of the assessed region, while resting muscle mass has little impact on the distribution of skin temperature in women at different stages of life.
Implications: The study shows the need to consider anthropometric characteristics when analyzing skin temperature by IT.
Keywords: Thermography, Menstrual cycle, Bioimpedance

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Acknowledgment: Not applicable.
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ANTHROPOMETRIC MEASURES AND PAIN INFLUENCE THE STAIR CLIMB TEST PERFORMANCE IN PATIENTS WITH KNEE OSTEOARTHRITIS?

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Background: For the evaluation of physical function in the population with knee osteoarthritis (KOA), one of the tests recommended by the Osteoarthritis Research Society International (OARSI) is the Stair Climb Test, so it is important to investigate which factors can influence performance in the test.
Objective: To investigate whether sex, age, BMI, and pain intensity interfere with the performance of the population with KOA in the Stair Climb Test.
Methods: The present study is an observational cross-sectional study. Participants over 45 years of age, of both sexes, with clinical diagnosis of KOA, according to the American College of Rheumatology (ACR) criteria, and pain intensity greater than 4, evaluated by the Numeric Rating Scale (NRS), were recruited. Anthropometric data were collected through an initial anamnesis, followed by the application of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire. Subsequently, participants were submitted to the Stair Climb Test. Participants were instructed to climb and descend a flight of 11 stairs, each 20 cm in height, quickly but safely. The sum of the times for climbing and descending was recorded by the evaluator. The Statistical Package for Social Sciences, version 21.0, was used for the multiple linear regression analysis, and the significance level was set at 5%.

Results: 100 participants were included, 52% of whom were female, with a mean age of 60 years. The mean BMI of the participants was 29.64 with a mean pain intensity of 9.5 by the specific domain of the WOMAC questionnaire and Stair Climb Test performance of 22.79 seconds. The final regression model (Table 1) indicated that sex (p = 0.029), age (p = 0.001), BMI (0.004), and pain by the specific domain of the WOMAC (p = 0.003) may explain 42% of the variability in Stair Climb Test performance.
Conclusion: The present study demonstrates that there is an association between sex, age, BMI, and painful symptoms in the performance of the Stair Climb Test, which may be potential factors that interfere with the performance of subjects with KOA.
Implications: Understanding the influence of such factors helps in the interpretation of the performance of patients with knee osteoarthritis in the stair climb test.
Keywords: Knee osteoarthritis, Rheumatology, Physiotherapy

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SUBGROUP ANALYSIS IN SYSTEMATIC REVIEWS OF PHYSICAL THERAPY INTERVENTIONS PUBLISHED IN HIGH IMPACT JOURNALS: A METAEPIDEMIOLOGICAL STUDY

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Background: Systematic reviews (SRs) publications focusing on physical therapy rehabilitation have significantly increased. SRs are known to present the highest level of scientific evidence, thus constituting the most reliable type of research to be used in clinical decision-making in healthcare. In these studies, subgroup analysis is usually used as a statistical control technique to investigate sources of heterogeneity and explore treatment effects in individualized subgroups. However, the analyses recorded in the protocol are not always reported in published SRs, with complete absence, partial reduction in the number of analyses, and even the inclusion of new subgroups not protocolled.
Objectives: To evaluate the frequency with which physical therapy intervention SRs, published in high-impact journals, perform subgroup analyses that are previously reported in protocols or add post-publication unplanned analyses.
Methods: The Rayyan software was used by two independent authors to select all SRs published between March 2020 and August 2022 in the 10 highest impact rehabilitation journals according to the Journal Citation Reports (JCR). Disagreements were resolved by an experienced third reviewer. Subgroup analysis described in the protocol and reported in final publications were compared using descriptive statistics.
Results: 3,032 records were identified, of which 2,927 were excluded for not meeting the inclusion criteria. 105 SRs published in journals with impact factors ranging from 4.76 to 10.71 (JCR, 2021) were included. Of these, 60 (57.1%) reported subgroup analyses that were consistent with what was recorded in the protocol; 29 (27.6%) did not report any of the previously registered analyses, and 16 SRs (15.3%) added unplanned analyses in the protocol, with an average of 1.6 new subgroup analyses included in the final publication.
Conclusion: The findings indicate that 43% of SRs present significant discrepancy between the subgroup analyses planned in registered protocols and those reported in published SRs, even in high-impact scientific journals. Thus, it is essential that SRs conducted in the physical therapy preserve as much as possible in the final text, the subgroup analyses planned in their respective protocols, making their results more reliable and accurate for researchers and clinicians in the field.
Implications: This study has the potential to highlight shortcomings in the methodological strategies used in SRs in the physical therapy field and, consequently, raise awareness for greater care in the planning and execution of studies that are more transparent and faithful to previously registered protocols, as well as greater caution in interpreting SR results, even if they come from sources considered to be reliable.
Keywords: Evidence-Based Practice, Systematic Reviews as Topic, Rehabilitation

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Ethics committee approval: Not applicable.

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MOTOR AND FUNCTIONAL EVALUATION OF CHILDREN EXPOSED IN THE INTRAUTERINE PERIOD TO THE ZIKA VIRUS

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Background: The Zika virus (ZIKV) is an arbovirus of the Flaviridae family, which brought many repercussions for causing microcephaly in newborns (NBs) of mothers who became ill during the gestational period. Neurological findings and alterations presented in the neuropsychomotor development of these children characterized Congenital Zika Virus Syndrome (SCZ), including delay in motor, cognitive, and speech development, visual and auditory alterations, epilepsy, and cerebral palsy. Among the main neurological findings are described severe microcephaly with cortical atrophy and malformations. So far, it is known that the delay in the NPMD of children will depend on the degree of CNS injury and in what gestational age period the infection occurred. In this sense, the earlier the intervention measures are applied to these children, the smaller the impacts on their development and future lives.
Objectives: To evaluate the motor and functional characteristics of children exposed in the intrauterine period to ZIKV.
Methods: Cross-sectional study with 16 children aged between 6 and 36 months of both sexes, residents of Pará state, exposed to ZIKV infection during pregnancy and evaluated by the Zika Project Physiotherapy team, developed at the IEC. Strength was assessed by Medical Research Council (MRC) scale and muscle tone using the modified Ashworth scale (ASW). In addition, the Gross Motor Function Classification System (GMFCS), the Mini-Manual Ability Classification System (MACS), developed to assess the ability to handle objects during activities of daily living, and were apllied the Pediatric Assessment of Disability Inventory (PEDI).

Results: In muscle strength, 11 children (68.75%) shown preserved strength. Regarding muscle tone of MMSS and LL, all were characterized as normotonic. On the GMFCS scale, of the 16 children assessed, 10 (62.5%) had level 1; Two (12.5%) had level 2; Three (18.75%) had level 5, and 1 (6.25%) was not specified. Of the 16 participants evaluated by the MACS scale, 10 (62.5%) obtained grade 1; 4 (25%) achieved grade 5, and 1 (6.25%) was not specified. Furthermore, the lowest averages obtained through the PEDI scale were in the Self-Care item (21.68) and in the Social Function item, whose average was 9.56.
Conclusion: Children exposed to ZIKV during pregnancy, despite preserved tone and strength, have impaired gross motor function and poor performance in activities involving social function and self-care.
Implications: Research shows that exposure to ZIKV during the gestational period requires attention and care for the early detection of motor deficits and oriented instructions to improve self-care and socialization.
Keywords: Physiotherapy, Neurology, Zika virus

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Evandro Chagas Institute (seem CAAE 68067217.0.0000.0019)

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E-HEALTH SELF-MANAGEMENT PROGRAM FOR WORKERS WITH (RISK) OF LOW BACK PAIN

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Background: Low back pain is an important health problem in the world, with a high prevalence among workers. It is a complex condition that can be influenced by several biological, psychological, social, cultural, and occupational risk factors. Symptoms of pain and physical-functional disability resulting from low back pain directly affect participation at work. Therefore, interventions to manage low back pain must be carried out at all levels of care, including approaches compatible with the occupational context and with the characteristics of the workers. Pain self-management through educational interventions is an approach capable of meeting this need. In this case, workers must have access to knowledge of their own pain experience (self-assessment) and to content and information related to the neurophysiology of pain and the factors that modulate it (pain education). The use of an application to deliver the pain education program seems to be an innovative, easily accessible solution capable of generating significant learning in the worker so that he can assess and intervene in his health status.
Objectives: Develop a self-management program (pain assessment and education) to be delivered in digital format (E-Health) through an application for mobile devices focused on the prevention and/or control of low back pain in workers.
Methods: The project will be carried out in 3 stages. Step 1 focuses on the conceptual and structural development of the self-management program; step 2 is aimed at developing the prototype of the mobile application to be used to deliver the program; and, finally, step 3 is intended to assess the acceptability and viability of the prototype. Each step has its own method that follows guidelines and criteria established by international and national recommendations.
Results: The conceptual framework of the self-management program adopted a model that articulates three intervention approaches for the prevention and control of low back pain. Each approach has self-assessment tools and specific content. The first approach is aimed at preventing low back pain in the occupational environment. The second and third approaches are aimed at controlling acute and chronic low back pain, respectively. Choosing these approaches allows the self-management program to be centered on each worker's individual pain or occupational exposure experiences. Fliplet (https://fliplet.com/) was chosen as the platform that would host the developed application, called Back Education and Management For Workers APP. A brief detail can be viewed at the link: https://drive.google.com/drive/folders/1vgolIYUhdv42E8KVghPYflUL486bqlzr?usp=sharing
Conclusion: The self-management program developed for the management of low back pain in workers seems to be a useful tool for self-assessment of pain and for access to knowledge and educational guidelines.
Implications: We believe that the program will be able to contribute to the production of data and analysis of information collected in the databases; and that its effects are able to generate in the worker the ability to assess and intervene on his health status with reliable information. This will help minimize barriers that limit management in workers with (risk) low back pain.
Keywords: Self-management, Backache, Workers

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Acknowledgment: Not applicable.
Ethics committee approval: UFSB (Federal University of Southern Bahia).

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PROFILE OF OLDER PEOPLE ACTIVE AT WORK DURING THE COVID-19 PANDEMIC: REMOBILIZE STUDY

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Background: The number of workers over 50 has increased, which creates a need to understand the impact that the extension of working life can have on health, ability to work, and well-being. In addition, we must consider that the isolation caused by the period of the COVID-19 Pandemic may have been a negative factor for the physical and emotional functions of these older adults, resulting in time off work.
Objectives: To describe the profile of older adults active at work during the COVID-19 Pandemic.
Methods: We analyzed data from the REMOBILIZE study, which involved a cohort study of older adults (60 years or older) living in 22 states in Brazil, during the COVID-19 pandemic, for an 18-month follow-up period. Data collection was performed through a questionnaire using the SurveyMonkey online platform. Participants were recruited using social networks (Facebook and Instagram) and WhatsApp. Older adults who were bedridden and who lived in long-term care facilities were excluded from the study. Data collection was carried out between May 18, 2020, and December 30, 2021, and for this analysis, we used only the information collected at baseline (May to July 2020).

Results: 1,482 older adults were interviewed, with an average age of 70 years, most of them female (74%), inactive regarding their occupation (56.4%), who use up to 3 medications (48.9%), the most frequent diseases being Diabetes Mellitus and Systemic Arterial Hypertension. Among the active older (36.8%), 89.7% were aged between 60 and 75 years, 64.8% were women, white (62.9%); married (61.7%), with more than nine years of study (70.1%), retired/pensioner (66.8%), taking up to 3 medications (52.3%), who reported that they were not anxious (91.4%), did not feel pain (78.7%) and had no difficulty sleeping (39.3%). Regarding the time they sat down (inside and outside the house) and walked to exercise, 32.1% reported not walking for that purpose and that they sat for an average of 4 hours or less per day. No difference was identified between the profile of the groups (general population, active and inactive); however, for those who declared themselves to be active about their occupation, a slight difference was observed in the percentage of the variables: being retired/pensioners; more anxious; walking to exercise and for a time between 30 minutes and 1 hour and reported less pain.
Conclusion: When observing the general profile of the older, no major differences were identified between those who declared themselves active and those who were inactive about their occupation at the beginning of the COVID-19 Pandemic.
Implications: It is necessary to understand this older worker's profile and outline preventive measures to remain active at work and preserve his quality of life and ability to work.
Keywords: Elderly, Work, COVID-19

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Universidade Cidade de São Paulo (CAAE: 31592220.6.0000.0064).

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IMMEDIATE EFFECTS OF SELF-MYOFASCIAL RELEASE ON NEUROMUSCULAR AND FUNCTIONAL PERFORMANCE OF PHYSICALLY ACTIVE HEALTHY ADULTS: A CROSSOVER STUDY

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Background: Myofascial self-release (SMR) has been investigated for its benefits such as increased range of motion, reduced myofascial pain, decreased post-exercise muscle fatigue pain, and improved physical performance. However, changes in neuromuscular activity, muscle strength, and range of motion after SMR remain poorly explored.
Objectives: To investigate the immediate effects of SMR compared to static stretching on the neuromuscular and functional responses of lower limbs in physically active adults.
Methods: Two-period randomized crossover clinical trial with a sample of 29 participants [mean (SD)] [42.8 [6.2] years, 21:4 female: male). Participants performed one session of SMR or static stretching on the vastus mediallis and biceps femoris, each lasting 60 s, depending on the randomization sequence of the study phase (washout period of 1 week). Participants were assessed before and after each intervention regarding myoelectric activity (surface electromyography), maximal isometric muscle strength (load cell), and range of motion (Wells' test).
Results: We observed statistical evidence of a difference in myoelectric activity (pre-post) between SMR and static stretching of vastus mediallis (difference [95%CI]: -0.076 [-0.143; -0.009]) and biceps femoris (-0.109 [-0.191; -0.027]). We observed statistical evidence of a difference in isometric strength between SMR and static stretching of the biceps femoris (5.284 [2.970; 7.598]) but not vastus mediallis (0.247 [-5.639; 6.132]). We observed no statistical evidence of a difference in the mean differences between static stretching and SMR for a range of motion (-0.112 [-1.000; 0.776]).
Conclusion: Both SMR and static stretching immediately increase the range of motion of the lower limbs. Simultaneously, static stretching seems to increase the myoelectric activity whereas SMR decreases it. Further studies are required to verify the effects on isometric muscle strength.
Implications: In resistance training centers, the implementation of static stretching and/or SMR can be reviewed in the pre-training of these exercises, as they are associated with muscle myoelectric improvement.
Keywords: Muscle strength, Flexibility, Surface electromyography

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SPINAL MANIPULATIVE THERAPY FOR SCIATICA: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Background: Spinal manipulative therapy has already been widely investigated in patients with low back pain and has been shown to be effective in chronic patients. Recommendations for the use of manipulative therapy in patients with sciatic pain are based on indirect evidence, relying on studies with chronic low back pain. The benefits and harms of spinal manipulative therapy are not widely studied in patients with sciatic pain.
Objectives: To systematically review the effects of spinal manipulation therapy (SMT) for patients with acute, subacute, and chronic sciatica for short-, medium-, and long-term pain and disability.
Methods: Systematic review of randomized controlled trials using manipulative therapy versus any comparator group. The search was carried out in the databases MEDLINE, EMBASE, PsycINFO, Global Health, CENTRAL, Web of Science, CINAHL, SPORTDiscus, PEDro, and WHO with the descriptors: Low back pain; Sciatica; Manual Therapy and Randomized Controlled Trial. Two reviewers extracted the data and analyzed the risk of bias using the PEDro Scale and the certainty of evidence with the GRADE approach. The primary outcomes were pain and disability.
Results: Sixteen randomized controlled trials were included in this review (n = 1385). Seventeen comparisons were driven from single randomized controlled trials with low and very low certainty of evidence (GRADE). The mean risk of bias for the included studies was

5.9 (SD=1.5), measured on a 0-10 scale. SMT was shown to be more effective than conventional physical therapy for leg pain, with a low certainty evidence and a moderate effect size (MD= -1.78 points; 95% CI -0.44 to 3.11 in 4 weeks) but not for back pain (MD= -2.04 points; 95% CI -5.15 to 1.07 in 4 weeks). There is low certainty evidence that SMT is similar to microdiscectomy for chronic sciatica in the short term (MD= -0.3; 95% CI -0.95 to 0.35), medium-term (MD= -0.2; 95% CI -0.87 to 0.47), and long term (MD= -0.1; 95% CI -0.82 to 0.62).
Conclusion: The certainty of the evidence ranged from low to very low in all comparisons, with small to moderate size effects. There is uncertainty around the effect estimates of SMT for patients with acute, subacute, and chronic sciatica.
Implications: Based on this systematic review, there is uncertainty about the efficacy of spinal manipulative therapy (SMT) for patients with acute, subacute, and chronic sciatic pain. Healthcare professionals should carefully evaluate treatment options for patients with sciatic pain. Further research is needed to evaluate the efficacy of manipulative therapy in patients with sciatic pain.
Keywords: Low back pain, Sciatica, Spinal Manipulative Therapy

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DO SLEEP DISORDERS INFLUENCE THE COGNITION AND QUALITY OF LIFE OF INDIVIDUALS WITH PARKINSON'S DISEASE?

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Background: Poor sleep is common among individuals with Parkinson's disease (PD) and may affect up to 98% of patients. However, the relationship between poor sleep, cognitive aspects, and quality of life (QoL) in this population remains unclear.
Objective: To investigate the relationship between poor sleep, cognition, and QoL in individuals with Parkinson's disease.
Methods: This cross-sectional study included 53 subjects with idiopathic Parkinson's disease (PD), who were non-institutionalized and had mild to moderate PD. Sociodemographic data was collected using a questionnaire, and the following assessment tools were used: the Parkinson's Disease Sleep Scale-2 (PDSS-2) to assess the quality of sleep, the Montreal Cognitive Assessment (MoCA) to assess the cognitive status of patients, and the Parkinson's Disease Quality of Life Questionnaire (PDQ-39) to assess the QoL. Spearman correlations were used for statistical analysis, with a significance level of 5%.
Results: Out of the 53 subjects, 34 were men and 19 were women, they had an average age of 66.62 $\pm$ 9.46. In analysing the sleep and cognition, a moderate correlation was found between the Parkinson's Disease Sleep Scale-2 (PDSS-2) and the visuospatial domain (r=-0.401; p=0.003) as well as the total Montreal Cognitive Assessment (MoCA) score (r=-0.309; p=0.024). In analysing the sleep and quality of life, a moderate to strong correlation was observed between the PDSS-2 and the PDQ-39 domains, specifically mobility (r=0.598; p=<0.001), communication (r=0.628; p=< 0.001), bodily discomfort (r=0.620; p=< 0.001), and the total score (r=0.773; p=< 0.001). Furthermore, a subanalysis by gender was performed, and the groups of men and women were found to be similar in terms of age, time of diagnosis, the stage of the disease, and the PDSS-2, PDQ-39, and MoCA scores. The results showed that in men, the PDSS-2 had a correlation with cognition, with a strong correlation observed between the PDSS-2 and the naming domain (r=-0.623; p=< 0.001), and moderate correlations with the visuospatial (r=- 0.494; p=0.003), language (r=-0.365; p=0.034), abstraction (r=-0.400; p=0.019), delayed recall (r=-0.416; p=0.014), orientation (r=-0.392; p=0.022), and the total MoCA score (r=-0.512; p=0.002) domains. In terms of QoL, women showed a strong correlation between the PDSS-2 and the Activities of Daily Living domain (r=0.685; p=0.001), bodily discomfort (r=0.649; p=0.003), and the total PDQ-39 score (r=0.728; p< 0.001). In men, a strong correlation was found between the PDSS-2 and the domains of emotional well- being (r=0.644; p=< 0.001), communication (r=0.731; p=< 0.001), bodily discomfort (r=0.718; p=< 0.001), and the total PDQ-39 score (r=0.772; p=< 0.001).
Conclusion: Individuals with worse sleep quality have poorer cognitive scores, particularly men. Additionally, poorer sleep quality is associated with a worse quality of life in domains such as mobility, communication, and bodily discomfort.
Implications: Screening for sleep disorders and implementing prevention and treatment strategies are necessary for individuals with Parkinson's disease (PD) who have worse sleep quality, given the negative impact on cognitive performance and quality of life. Further studies should explore the association of sleep quality with other symptoms of PD.
Keywords: Parkinson's Disease, Sleep, Cognition

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Ethics committee approval: This study was approved by the Research Ethics Committee from the State University of Londrina (UEL) under approval, CEP-UEL No. 5,271,985.

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THE EFFECT OF BIOFEEDBACK ON ANXIETY AND BALANCE CONFIDENCE DURING STANDING

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Background: Postural control involves the maintenance of orientation and postural balance, which are crucial aspects to allow the activities of daily living. The biofeedback technique has been of potential interest to postural control rehabilitation, since it seems to confine postural sway within the stability limits, ensuring postural balance during standing. However, whether the performance of postural balance is associated with other factors, such as anxiety and balance confidence, is an open issue we addressed here.
Objectives: This study aimed to investigate the effect of different biofeedback techniques on anxiety and balance confidence during standing.
Methods: Twenty-sixty participants were recruited in this study and tested in three tasks while standing on the force platform: 1) standing with eyes open (EO); (2) posturography biofeedback (BFcp), consisting of keeping the center of pressure (CP) position as close as possible to a target located in front of the individual; (3)

biofeedback of laser (BFlaser), consisting of pointing a laser as close as possible to the same target used before from the right wrist. The CP position was measured using the force platform for 60 seconds and the CP sway area was computed using the whole trial data in each experimental task. Scales for the assessment of balance confidence and anxiety, consisting of visual scales ranging from 0 to 100, were applied at the end of each task. On the confidence scale, "0", "50" and "100" mean "no confidence", "moderate confidence" and "complete confidence", respectively. On the anxiety scale, "0", "50" and "100" denote "no anxiety", "moderate anxiety", and "complete anxiety". A one-way analysis of variance (ANOVA) for repeated measures was used to compare the emotional scores and CP sway area among postural tasks, and post hoc comparisons were made with the Tukey HSD test (significance level of 5%).
Results: ANOVA ($F=6.19$, $p<0.01$) revealed a smaller balance confidence in BFcp (média±desvio padrão; 72.88±22.41) than EO (86.15±22.05), while no differences were observed between BFlaser (81.34±19.82) and the other tasks. For anxiety, ANOVA did not show differences among EO (20.76±33.21), BFcp (27.88± 25.42), and BFlaser (24.23±29.78). Moreover, the CP sway area ($F=33.11$, $p<0.01$) was significantly smaller in the BFcp (2.27±1,27 cm^2) than EO (3.54±2.08 cm^2) and BFlaser (5.51±2.87 cm^2), and in the EO compared to BFlaser ($p<0.01$ in all cases).
Conclusion: Balance confidence alterations were identified with BFcp in relation to the other postural tasks. These findings seem to suggest that psychological factors could contribute to explain, even if partially, alterations in the postural stability during the biofeedback; a smaller CP sway area was found in BFcp than EO.
Implications: These aspects seem to be little exploited in the clinical environment, in which the knowledge of factors associated with postural stability during biofeedback could assist in improving the evaluation and rehabilitation protocols of postural control.
Keywords: Postural balance, Biofeedback, Balance confidence

Conflict of interest: The authors declare no conflict of interest.

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Ethics committee approval: Clementino Fraga Filho University Hospital (HUCFF, EC number: 093/03.

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PROGNOSTIC MODELS FOR PEOPLE WITH LOW BACK DISORDERS RECEIVING CONSERVATIVE TREATMENT: A SYSTEMATIC REVIEW

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Background: Low back pain is a musculoskeletal condition that affects many people worldwide and although there are several types of conservative treatments, either physiotherapy and/or pharmacological, the patient does not always obtain satisfactory results after treatment. To improve this situation, many prognostic models have been studied, developed, and validated. However, it is uncertain the available evidence about the prognostic models for predicting the success or failure of patients with low back pain after a conservative treatment.
Objectives: Identify and evaluate prognostic models' ability to predict success or failure in patients with low back pain after receiving conservative treatments.
Methods: Literature searches were conducted in three different electronic databases (MEDLINE, EMBASE and CINHAL). Prognostic models predicting the success or failure of conservative treatment in adults with low back pain were considered eligible. Studies investigating low back pain related to a severe pathology were excluded. Two independent reviewers performed the study selection and data extraction. The individual performances of the prognostic models were performed descriptively.
Results: Searches initially retrieved 13,013 studies. After analysis considering inclusion criteria, 81 studies were included in this systematic review. Of these, 78 (96.3%) developed and internally validated the prognostic models, and only 4 (3.7%) developed and externally validated the models. Regarding the discrimination of the models studied, the c-statistics or area under the curve (AUC) ranged from 0.44 to 0.96. Regarding the calibration, the calibration slope and intercept ranged from 0.74 to 1.06 and from -0.01 to 0.34, respectively. Regarding the sensitivity and specificity of the prognostic models, there was a variation between 31.0% and 94.5% and from 14.9% to 93.7%, respectively.
Conclusion: Although prognostic models have been developed, discrimination and calibration, as well as specificity and sensitivity, varied significantly among them. In addition, there were few studies investigating the external validation of these models.
Implications: Although some prognostic models have been developed, validated, and are able to predict success or failure in patients with low back pain undergoing conservative treatment, necessary to implement such models in clinical practice due to the lack of evidence regarding external validation.
Keywords: Low back pain, Prognostic models, Conservative treatment

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PREVALENCE OF SARCOPENIA IN BRAZILIAN ELDERLY: AN UPDATE AND SYSTEMATIC REVIEW

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Background: The sarcopenia associated with aging is characterized by loss of muscle mass and strength, decline in functionality, independence, and quality of life. With increasing life expectancy in Brazil, the number of elderly is growing, and with this, attention must be paid to changes in sarcopenia prevalence rates over the years.
Objective: This systematic review aims to estimate and update data on the prevalence of sarcopenia in Brazilian elderly.
Methods: Electronic and manual searches of databases, relevant journals and reference lists with no language restriction were performed. English descriptors (mentioned in a previous study[1]) were

used in the detailed search strategy. Cross-sectional, cohort, longitudinal and all studies that reported the prevalence of sarcopenia in Brazilian elderly individuals aged 60 years or older, whether community-based, institutionalized, clinical, outpatient and/or inpatient, were included in the study. The sub-classifications of Sarcopenia investigated were pre or risk of sarcopenia, confirmed sarcopenia, severe or severe sarcopenia. After evaluating titles and abstracts, potential full texts were assessed for eligibility by two independent reviewers (SPC and LACT). Studies that met the eligibility criteria were included. The search strategy used English descriptors related to "prevalence", "epidemiology", "sarcopenia", "elderly", "Brazil" and their variations[1]. Register PROSPERO 2022 CRD42022355825.
Preliminary results: A total of 4830 studies were found in databases that included MEDLINE, AMED, CINAHL, EMBASE, LILACS, SciELO, Google Scholar hand search. In addition, a manual search of relevant journals and reference lists of eligible studies was performed, and Brazilian experts in the field were consulted to identify any important studies and previous systematic reviews (November 2022). Of these studies, 152 were duplicate articles, 4678 had their titles and abstracts evaluated, 369 articles were selected for reading in full. Of the total number of studies analyzed, 60 were included, with 18,258 participants. The mean prevalence of sarcopenia was 28.59% [0.3% (minimum value) to 63.2% (maximum value)]. Among the likely factors contributing to the variability in the prevalence of sarcopenia in Brazil are the heterogeneity of diagnostic criteria and the changes in muscle mass, muscle strength, and physical function assessed by different instruments ranging from calf measurements to dual-energy x-ray absorptiometry.
Conclusion: Aging-related sarcopenia is an emerging public health problem in Brazil. Updates on the subject show an increase in the prevalence of sarcopenia in the elderly in Brazil. Thus, there is an urgent need for planning health strategies aimed at the prevention of sarcopenia in the elderly population.
Implications: Improvement of public health and consequently the functionality of the elderly.
Keywords: Sarcopenia, Elderly, Prevalence

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DO THERAPIST-ORIENTED HOME REHABILITATION IMPROVE HAND FUNCTION AND HANDGRIP IN WOMEN WITH SYSTEMIC SCLEROSIS?

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Background: Systemic Sclerosis (SS) presents peculiar clinical and functional aspects that limit activities of daily living (ADL). The hands are primarily affected, and the functional disability of the hands is one of the main components of their overall disability.
Objectives: To evaluate the impact of a therapist-oriented home rehabilitation (TOHR) on the perception of difficulty in performing manual tasks and on peripheral muscle strength.
Methods: Prospective quasi-experimental, longitudinal study, including women diagnosed with SS based on the criteria of the American College of Rheumatology and the European League Against Rheumatism, from the outpatient clinic of the Pedro Ernesto University Hospital. The physiotherapist accompanied the rehabilitation of people with SS at a distance, for a period of 12 weeks. The home exercise program consisted of 3 sessions per week, including flexibility training exercises, muscle strengthening, postural control training and aerobic training and relaxation exercise. To measure the difficulty in manual tasks, the Cochin Hand Function Scale (CHFS) was used, it contains 18 items about ADL that require manual skill. There are six possible answers for each item, according to the difficulty of performing the task (0 to 5). The final score is the sum of all items and ranges from 0 to 90, the higher the score, the greater the difficulty in manual function. And to measure handgrip strength, an isometric hydraulic dynamometer (SH5001, Saehan Corporation, Korea) was used in the hand on the dominant side of the body, the highest value recorded among three measurements being considered for analysis, which followed the standardization of American Society of Hand Therapists. For comparison, the methods were applied pre-TOHR and post-TOHR.
Results: From November 2021 to November 2022, 23 women diagnosed with SS were recruited, with 5 patients excluded due to difficulty walking (n = 3) and treatment abandonment during the study protocol (n = 2). Among the 18 patients in the sample, we found a significant drop in the CHFS test score (p = 0.009) between the evaluation [21 (4—38)] and reassessment [13 (5-21)] moments. However, we did not observe significant changes (p = 0.060) in the handgrip measured in the assessment [23 (13—26)] and in the reassessment [24 (15— 27)].
Conclusion: Alterations in the hands of people with SS, such as progressive thickening of the skin, tendon fibrosis, muscle fibrosis, stiffening of the palmar aponeurosis, can lead to deformities and limit the range of motion. Physical exercise programs increase the efficiency of the muscles, improve joint articulation, in addition to having benefits in blood circulation, in the local inflammatory reaction and in the reduction of tissue stiffness. In this study, this was reflected in the perception of improvement in performing manual tasks, despite we did not objectively identify an increase in handgrip strength.
Implications: A therapist-oriented home rehabilitation (TOHR) have a powerful effect on the performance of manual tasks. Thus, they should be recommended as an adjunct to the drug treatment of patients with SS, as they increase physical and functional capacity.
Keywords: Hand function, Rehabilitation, Systemic sclerosis

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DEPRESSIVE SYMPTOMATOLOGY WITH DISABILITY IN OLDER ADULTS DURING THE COVID-19 PANDEMIC: A CROSS-SECTIONAL STUDY

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Background: Depressive symptoms are manifested by depressed mood and lack of interest in carrying out activities of daily living. Disability is the term used to explain the negative aspects of the interaction between the individual and their contextual factors,

which include disabilities, activity limitations and restrictions on social participation. Some evidence, prior to the pandemic, showed the association of depressive symptoms with negative outcomes related to body functions in the older adults. However, we did not observe studies in the literature that explore the relationships of this variable with the disability of community-dwelling older adults, in the context of the COVID-19 pandemic.
Objectives: To investigate whether there is an association between depressive symptoms and disability in community-dwelling older adults during the COVID-19 pandemic.
Methods: Cross-sectional study (Survey) with Brazilian community-dwelling older adults, with a mean age of 68.2 (±6.8) years. Validated instruments were used to assess depressive symptoms (Center for Epidemiological Studies Depression Scale - CES-D) and disability (World Health Disability Assessment Schedule - WHODAS 2.0 – 12-item version). Sociodemographic issues, internet use, number of comorbidities, perceived social isolation, physical activity and type of health care were evaluated. Multiple linear regression model was used to investigate the association between depressive symptoms and disability (5% significance level).
Results: The sample consisted of 167 elderly people, of whom 67.5% were female. The average score of the CES-D was 16.3 (±7.2) points, with 80 (47.9%) older adults considered to have depressive symptoms; and the mean WHODAS 2.0 score was 19.6 (±7.8) points. In the multiple linear regression model, adjusted for covariates, older adults with depressive symptoms (β = 5.69; 95% CI 7.78; 3.59, $p < 0.001$) showed higher levels of disability.
Conclusion: There was an association between the presence of depressive symptoms and disability in the older adults in the community, in the context of the pandemic. It is necessary to monitor older adults with this condition to prevent complications and reduce disabilities.
Implications: These results reinforce the importance of health professionals tracking this condition to promote the functionality of the elderly. In addition, they indicate that functionality is also shaped by psychological factors and that these should be considered in the development of clinical and surveillance strategies.
Keywords: COVID-19, Depressive symptoms, International Classification of Functioning, Disability and Health

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PERFORMANCE IN THE WALKING SPEED TEST IN ELDERLY PEOPLE AND CROSSING TIME ON ROADS WITH TRAFFIC LIGHTS

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Background: Elderly pedestrians often report difficulty completing crossings in the time estimated by traffic lights, and reduced walking speed while commuting may be associated with negative health outcomes. It is also worth highlighting the scarcity of Brazilian studies, which reinforces the need for investigations aimed at this topic of interest.
Objectives: To analyze the gait speed of community-dwelling elderly; to verify the association of socioeconomic, clinical and health factors, considering the regulated crossing time on roads with pedestrian traffic lights and alternative cutoff points for walking speed.
Methods: A cross-sectional study was conducted with 411 elderly people (70.15±7.25 years old) from Macapá, Amapá. Socioeconomic, clinical and health variables were collected using a structured form. Walking speed was assessed using the usual walking speed test, which is among the Short Physical Performance Battery (SPPB) tests (time to walk 4 meters). For the analysis of the established time (<1.2 m/s) for crossing roads with traffic lights for pedestrians, data consulted from the city's traffic departments and alternative cutoff points (<1.1 m/s; <1 .0 m/s and 0.9 m/s). Data were analyzed using descriptive and inferential statistics from the binary logistic regression model ($p<0.05$ and 95%CI).
Results: The mean walking speed time was 0.99±0.29 m/s. A total of 123 traffic lights were recorded in the city of Macapá, of which (56.1%) are pedestrian traffic lights; most roads (87.8%) do not have indications for crossing; 52% do not have a crosswalk demarcated on the road; and 80.5% do not have lowering or adaptation of the track at the crossing point. Most of the elderly (76.4%) presented a walking speed lower than the crossing time established by the regulation of roads with traffic lights for pedestrians (<1.2 m/s); and when considering alternative cutoff points, it remained unfavorable for most elderly people, except for the <0.9m/s classification. The logistic regression model indicated that elderly women, those of advanced age, with dependence for instrumental activities of daily living and with reduced muscle strength probably walk for less time than established by the traffic department (<1.2 m/s) and at alternative cutoff points.
Conclusion: The current weather pattern does not promote safety and exposes the elderly population to risks when crossing roads with traffic lights. The implementation of a time standard that considers the specificities of the elderly population in this city becomes fundamental.
Implications: Through the data obtained from this study, it will be possible to suggest a revision of the standards established for carrying out crossings in order to consider the specificities of the elderly population, as well as to favor their insertion safely in the place where they live, providing conditions that allow their autonomy and integration into society.
Keywords: Elderly, Walking speed, Pedestrian

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DISSEMINATION OF KNOWLEDGE ON WORKER'S HEALTH FROM INSTAGRAM PROFILES

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Background: The dissemination of knowledge is defined as an active process, which aims to deliver information from clear, simple,

action-oriented messages and adapted for each audience. Currently, social media (Instagram, Twitter, Reddit, WeChat and others) represent an efficient tool for disseminating knowledge. In this sense, social media can contribute to the dissemination of knowledge to workers, professionals, researchers, and others interested in the field of ergonomics and workers' health.
Objective: To evaluate the use of Instagram profiles for the dissemination of knowledge in ergonomics and workers' health.
Methods: This is an exploratory and descriptive study, based on data mining available on Instagram (IG). The profiles were identified through search engines by username and by subjects of interest ("hashtags"). An initial search identified the three most used terms: "Worker's Health", "Occupational Health" and "Ergonomics". Then, 3 consecutive searches were performed for each term, with a filter for the "account" option, to identify the associated available profiles. These profiles were visited to collect information. The search was conducted in one day to reduce the risk of bias and to achieve search exhaustion.
Results: 167 profiles were found. Among them, 45 were excluded due to duplicity and 92 were exclusively to offer some product or service. Thus, 30 profiles were selected for data analysis. The profiles have different characteristics: where 3 were institutional, which exposed the services they provided, actions they performed and information on workers' health; 6 of the profiles were directly associated with research on workers' health, who disseminated their research and also disseminated studies related to workers' health; 10 profiles were dedicated purely to disseminating information about workers' health, another 7 profiles were dedicated to information on disciplines and extension projects, where they presented their actions and even indications of health protection measures in the work environment, as well as some related concepts and laws; 1 was dedicated to publicizing an event and 1 profile was dedicated to publicizing vacancies in occupational health. As for the activities of the profiles, 36.6% (n=11) of the total profiles analyzed are active or at least with updates in the year 2023.
Conclusion: The results revealed that most of the profiles found disseminate content related to ergonomics and worker health for commercial purposes or to disseminate information related to teaching and extension projects. A few of them publish scientific studies or make an explicit approach to science in their publications.
Implications: This study contributes to mapping the use of Instagram as a tool for disseminating knowledge. Its results point to a gap and the need for further studies addressing the typography of publications and its impact on the population that consumes this content.
Keywords: Dissemination of knowledge, Social media, Worker's health

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OCCURRENCE OF FALLS AND ASSOCIATED FACTORS IN ELDERLY RESIDENTS IN EUNÁPOLIS, BA

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Background: Aging is a worldwide phenomenon, which has raised the need for the world to create a strategy to keep these individuals more active and face the epidemiological changes resulting from this phenomenon. The fall, which is described as an abrupt phenomenon, has the potential to cause great harm to the elderly individual. Therefore, this stands out as an object of investigation of vital importance for the health of the elderly.
Objective: To investigate the occurrence of falls and associated factors in the elderly population of the city of Eunápolis, BA.
Methods: This is a cross-sectional, descriptive study with a quantitative approach using sociodemographic, epidemiological, and self-reported functionality questionnaires that were adapted according to the questionnaires used in the Longitudinal Study of Elderly Health (ELSI Brasil). To this end, 25 elderly people were interviewed, who were approached in a coexistence group for the elderly at a Basic Health Unit in the Urbis I neighborhood of the municipality of Eunápolis-BA. Data were organized and analyzed using Microsoft Excel and Software R. For the analysis of factors associated with the outcome, a theoretical determination model was built with the three hierarchical blocks.
Results: Most of the sample consisted of women, who had some functional limitation, where 40% had already suffered a fall. It was possible to observe an association between the number of diseases reported by the elderly and the presence of falls, and among individuals who were affected by falls, the most frequent place of occurrence was the residence.
Conclusion: It is possible to infer from the data generated by this study that age alone does not correlate with the occurrence of falls, however, the more diseases the elderly individual has, the more likely they are to suffer a fall. The study also sheds light on care for the environment where this elderly person is inserted, since falls that occurred at home were more frequent.
Implications: This study can help in understanding the risk factors for the occurrence of falls in the elderly, in addition to pointing to a possible focus of intervention, which is the environment where the elderly are inserted.
Keywords: Aging, Functionality, Risk of falling

Conflict of interest: The authors declare that there is no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Research Ethics Committee of the Federal University of Southern Bahia (UFSB) with registration number: 03357318.4.0000.8467

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PRESCRIPTION OF ACUPUNCTURE POINTS BY PHYSICAL THERAPISTS FOR NECK PAIN: INTER-RATER AGREEMENT

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Background: Acupuncture has been investigated in randomized controlled trials for the treatment of neck pain. However, whether there is an agreement between the combinations of acupuncture points in the scientific literature and prescriptions performed by acupuncturist physiotherapists remains unknown.
Objectives: This study investigated the agreement between acupuncture point prescriptions in the scientific literature and pragmatic prescriptions by physical therapists for people with neck pain.
Methods: Twenty-four acupuncture points were obtained from 27 randomized clinical trials investigating the effects of acupuncture on neck pain. Fourteen reviewers (8 men [57%], time (median [min,

max]) since completion of undergraduate and specialization courses of 18 [8, 27] and 12 [2, 25] years) reported which acupuncture points they recommend via an online questionnaire. The frequency and co-occurrence of prescribed acupuncture points were evaluated, as well as absolute and inter-rater agreement.
Results: Physiotherapists reported 22 (94%) acupuncture points and (median [min, max]) 7 [1, 16] acupuncture points individually. The most common acupuncture points were Ashi (n=11, 79%), Houxi SI-3 (n=10, 71%) and Kunlun BL-60 (n=9, 64%); the most common co-occurrent acupuncture points were BL60 (Kunlun) and Ashi (n=9, 64%). Inter-rater reliability was better-than-chance for 5 points (ranging from κ=0.432, 95% CI=[0.276; 0.533] Ashi point to κ=0.125, 95% CI=[0.087; 0.192] GB21 point). Furthermore, inter-rater agreement was worse-than-chance for 16 points (ranging from κ= -0.453, 95% CI=[-0.453; -0.116] TE14 to κ= -0.152, 95% CI=[-0.152; 0.000] points SI12 and GV20).
Conclusions: Pragmatic prescriptions of acupuncture points for neck pain by specialist acupuncture physiotherapists do not agree with prescriptions in the scientific literature.
Implications: There is a need for explicit, high-level evidence-based rules for prescribing and teaching acupuncture point combinations for neck pain to be included in future clinical trials.
Keywords: Neck pain, Traditional Chinese Medicine, Physical therapy, Rehabilitation

Conflict of interest: The authors declare no conflict of interest.
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PRELIMINARY DATA ON THE EFFECTS OF PHOTOBIOMODULATION ON TISSUE REPAIR OF BURNING INJURIES: A RANDOMIZED, CONTROLLED, DOUBLE-BLINDED CLINICAL TRIAL

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Background: Burning is a tissue injury that can be treated through photobiomodulation, which promotes tissue repair by activating physiological cascades that induce the synthesis of RNA and DNA, increasing the production of new cells. LEDtherapy is a type of phototherapeutic resource that uses photobiomodulation, this resource provides a cheaper treatment, easy to apply with less time when compared to LASERtherapy, this is due to the characteristics of LED light. However, there is a scientific gap, as the studies that have been developed in recent years report the effects of LASER in animal models or in vitro, little is known about the real effect of the treatment of burns with LED in human beings, thinking about it, the idea arose. hypothesis of what is the effect of this resource in human model.
Objectives: To compare the effect of red LED photobiomodulation, infrared LED and sham therapy on the rate of re-epithelialization, presence of pain, pruritus, skin temperature, healing quality and scar mobility among individuals with second-degree burns.
Methods: This is a double-blind randomized controlled clinical trial. 11 burn injuries were treated, divided into 3 groups: Red Led Group (n = 2), Infrared LED Group (n = 5), and Sham Group (n = 4), the group's stimulation by LED an application of 7J/cm^2 per point, in the Shan group, the application was mimicked. The presence of pain, itching, skin temperature and wound size were evaluated daily until healing, and at the end of healing, the mobility and quality of the scar were evaluated. Data were analyzed using descriptive statistics, re-epithelialization rate, skin temperature and scar mobility, ANOVA was performed for repeated measures, by Bonferroni post-hoc. One-way anova and for Kruskall wallis scar quality considering a significance level of $P \leq 0.05$.
Results: There was no statistical difference for the outcome pain, pruritus, rate of re-epithelialization and scar mobility and quality between the groups. However, it is possible to observe a clinical improvement in rate of re-epithelialization, pain and itching in the stimulation groups when compared to the shan.
Conclusion: It is necessary to be careful about the inferences made regarding the results of this research due to the low statistical power, however, it is possible to observe a clinical improvement in the volunteers who were treated with led therapy, the re-epithelialization rate and pain resolution and pruritus in the initial 48 hours.
Implications: The development of studies like this one can answer doubts about the use of LED therapy in wounds in general, and in addition can generate new perspectives for the treatment of burned patients, and insert the physiotherapist even more in the rehabilitation of these patients, thinking of a more uniform and organized healing, with fewer physical sequelae.
Keywords: Photobiostimulation, Healing, Reepithelialization

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: I thank the research team the volunteers who made themselves available to be part of this study.
Ethics committee approval: Approved by the Research Ethics Committee of the Health Sciences Center (CEP/CCS) under protocol n° 4.003.229, CAAE: 30671820.1.0000.5188 and registered in the Brazilian Registry of Clinical Trials - RBR-8bfznx6.

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DOES THE MOTOR DEVELOPMENT OF PRETERM INFANTS IMPACT ON LESS PARTICIPATION IN THE HOME ENVIRONMENT? PRELIMINARY DATA

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Background: Prematurity is one of the most prevalent biological factors in Brazil and may contribute to delayed motor, neurological, and sensory development, which may cause persistent problems in the future for these infants. Participation is essential for quality of life and health, especially in the home environment during early childhood, as it is an important component in motor development.
Objectives: To characterize the motor development and home participation of preterm infants vs full-term infants.
Methods: 3 preterm infants with corrected age (M= 36.1±0.05 gestational age), exposed group (EG); and 3 full-term infants (M= 38.5±0.86 gestational age), comparison group (CG) participated in this study. The outcomes, motor development, were assessed by the Alberta Infant Motor Scale (EMIA) and participation by the Young Children's Participation and Environment Measure (YC-PEM) questionnaire, both Brazilian versions. The score of motor development

was performed by a blind evaluator for the groups. Descriptive analyses were carried out.
Results: Infants of EG participated in 7 (53.84%) types of activities in the home environment, and presented a frequency mean of 3.38 (±0.0), while in the CG between 7 and 8 (58.97%) activities and showed a mean frequency of 3.89 (±0.31). In motor development, the EG obtained a mean total score of 17.6 (±2.51), percentile <5; while the CG, a mean of 23.67 (±5.50), percentile between 10 to 25.
Conclusion: Preterm infants presented less motor development and participation at home when compared to full-term infants. Further studies with larger sample sizes and in different contexts, such as in the community, are recommended.
Implications: Knowledge about prematurity and its impact on motor behavior and participation is essential for early intervention to support the demands of each family. The infants participation is correlated with motor performance; therefore, these factors need attention in the first months of life, a period of intense neuroplasticity of the central nervous system.
Keywords: Preterm infants, Participation, Child development

Conflicts of interest: The authors declare no conflict of interest.
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DOES THE ADDITION OF SELF-MANAGEMENT STRATEGIES FOR REDUCING SEDENTARY BEHAVIOUR TO MULTICOMPONENT TRAINING IMPROVE LEAN MASS INDEX?

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Background: In the aging process, changes in body composition occur, with an increase in fat mass and a decline in lean mass, and this decline is closely related to functional dependence and the appearance of disabilities. Physical exercise can directly cause changes in body composition. However, studies show that a long time spent in sedentary behaviour (SB) can lead to a reduction in functional independence and an increase in mortality, regardless of physical exercise. Despite this, evidence is still needed to verify whether the reduction in CS can have positive effects on body composition.
Objectives: To assess whether the adoption of self-management strategies (SMS) in multicomponent training (Multi) compared to isolated multicomponent training can improve the lean mass index of older adults who were physically active before the pandemic.
Methods: A single-blind, randomized, controlled clinical trial was performed. Forty-five elderly participants in a multi-component group physical exercise project were divided into two groups: Multi and Multi + AG. The Multi consisted of aerobic exercises, muscular resistance, balance, and flexibility (3x week, 50 minutes/session). The SMS consisted of setting goals and weekly telephone follow-ups by a professional trained in these strategies. The lean mass index (lean mass/height^2) was evaluated by dual-energy X-ray absorptiometry (DXA). The intervention lasted 16 weeks, starting after the release of group physical exercises, due to the COVID-19 pandemic scenario, and reassessed shortly after 16 weeks of intervention. A generalized mixed linear model was used to analyze the data (fixed factors: time, group and interaction and random factor: subjects).
Results: The sample had a predominance of 74% females, a mean age of 74.45 ± 6.1 years, body mass of 69.41 ± 15.43 kg. Both groups showed an increase in lean mass index (estimated marginal means: 0.217, CI: 0.01 to 0.42, $p < 0.038$). There was no group effect and no interaction between group and time. In this way, both groups obtained improvements in the lean mass index.
Conclusion: SMS to reduce SB did not potentiate the effects of Multi on the lean mass index of older adult participants in a group physical exercise project.
Implications: The provision of multicomponent physical exercise programs for the older adults, with characteristics similar to the sample of this study, may be sufficient to improve the lean mass index.
Keywords: Older adults, Body composition, Sedentary behavior

Conflict of interest: The authors declare no conflict of interest.
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PROFILE CHARACTERIZATION OF PARTURIENTS WHO HAD VAGINAL BIRTH IN A PUBLIC HOSPITAL OF BRASILIA IN THE FIRST SEMESTER OF 2019

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Background: In 2019, there were 42.422 deliveries in Distrito Federal, of those that 45,45% were vaginally, and 54,52% were caesarean sections according to Live Birth Information System. Considering the presented data, studies reaffirm the high rate of caesarean sections. Public measures were adopted to follow the global recommendations, that from all the births less than 15% should be caesarean sections. The Rede Cegonha include actions to ensure the quality, security and humanization of the service available to the women, since the pregnancy to the first two years of the child's life. Therefore, this study presents the relevance of the monitoration from the ways of birth and the impacts from each one.
Objectives: Analyze the most prevalent vaginal birth parturients profile from a hospital in Brasília in the first semester of 2019.
Methods: This study consist in a descriptive cross-sectional study, wich analyze medical records from a hospital in Brasília, in 2019 from January to June. The excluded criteria were twin pregnancy and illegible letters, and the included criteria were: vaginal birth. The analysis consists in sections, the describe the sociodemographic, parturient clinical profile, and newborn data.
Results: Among the study's eligibility criteria, 437 medical records were selected. For characterization of the sociodemographic

profile, it was observed that 51,72% comprises the age group between 20 and 29 years, 66,13% had brown-skinned, 42,33% were single, 38,44% lived in Águas Lindas, 56,75% completed high school. Concerning the clinical data, 59,27% were multiparous women, 25,63% completed 39 weeks pregnant, 54,23% weren't induced, 51,59% didn't use anesthesia, 55,15% of the births were in lithotomy position, 29,06% had second-degree laceration, 91,76% didn't have an episiotomy, and 94,05% had a companion. Regarding the newborn's data, the mean weight was 3,15kg, the mean length was 48,4cm, the mean head circumference was 33,8cm and the mean of the first APGAR was 8,1.
Conclusion: With the presented data, it's possible to conclude that the vaginal birth's parturients' characterization it's variable in the majority of the analyzed factors and even though it was observed good obstetric practices, such as the presence of a companion and a few cases of episiotomy, it's still necessary the implementation of methods that reduce the risk of perineal injury, and comprehend the reason that most of the births are realized in lithotomy position, that biomechanically aren't favorable to the birth.
Implications: Many resources can be used to reduce the risk of perineal injury, and much of them are studied by obsthetric physical therapy. Therefore, it's necessary to encourage the education of the benefits that other positions, besides the lithotomy, can bring in the moment of the birth.
Keywords: Natural Childbirth, Demography, Maternal and Child Health

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: This study was approved by the Ethics and Research Committee from Faculdade de Ceilândia (CEP/FCE), with CAAE number 80704617.5.0000.8093.

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REFERENCE VALUES FOR PEAK EXPIRATORY FLOW OF BRAZILIAN ELDERLY PEOPLE IN THE AMAZON REGION

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Background: Peak Expiratory Flow (PEF) is a variable widely used to assess the effectiveness of coughing and to identify airway obstruction. This measurement can be obtained using the Peak Flow Meter, a portable equipment that is easy to access, perform and handle. However, specific studies that propose reference values for the Brazilian elderly people are still scarce.
Objectives: To describe PEF scores according to age group and propose reference values for community-dwelling elderly in the Amazon region.
Methods: Cross-sectional study carried out with community-dwelling elderly in Macapá, Amapá. The PEF was evaluated using an expiratory flow meter and the sample characterization data were collected through a semi-structured questionnaire. A descriptive statistical analysis of the data was carried out using means, standard deviations, absolute values, percentages, and percentiles P10, P20, P30, P40, P50, P60, P70, P80, P90 stratified by sex and age groups (60-64; 65-69; 70-74; 75-79; 80 or more).
Results: A total of 409 elderly people were evaluated, of whom 138 (33.74%) were men and 271 (66.26%) were women. The largest number of seniors evaluated in total was in the age group of 60 to 64 years (n=110), with the highest mean value obtained from PEF, both for the total sample (307.20±137.03 L/min) and for men (n=44; 407.04±130.35L/min) and women (n=66; 240.65±94.88L/min). PEF was reduced with advancing age in both sexes, with a decrease of 167.71±35.53 L/min for men and 67.94±29.27 L/min for women, in the elderly age group younger that elderly people with more advanced age. PEF normative values with scores distributed in ascending order according to the 10th percentile (worst value) were 122L/min, 205L/min and 110L/min, and the 90th percentile (best value) were 500L/min, 575L/min and 360L/min, respectively of the total sample, men and women.
Conclusion: The present study provides PEF reference values for a representative sample of community-dwelling elderly in the Amazon region, according to gender and age group.
Implications: Based on the reference values developed in our study, it is possible to help physiotherapists in clinical practice during the evaluation of PEF measurements in the elderly, in relation to normal values for a given age group and gender. Additionally, based on studies such as ours, there is an incentive for health professionals to pay greater attention to the respiratory health of the elderly population, because although respiratory diseases are the main causes of morbidity and mortality among the elderly, they still need to be included in models of geriatric assessments.
Keywords: Aging, Peak expiratory flow rate, Reference values

Conflict of interest: The authors declare no conflict of interest.
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REFERRAL TO PRIMARY HEALTH CARE PHYSIOTHERAPISTS IS ASSOCIATED WITH CLINICAL AND SOCIODEMOGRAPHIC VARIABLES: A RETROSPECTIVE STUDY

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Background: Low back pain (LBP) is a public health concern. The referral process to the Physiotherapist in Primary Health Care (PHC) should be assessed, as it improves disability and reduces the use of low-value resources, though there is a need for consolidation within SUS.
Objectives: To investigate whether sociodemographic and clinical variables explain referrals to Physiotherapists working at NASF units (Expanded Family Health Center) in the Federal District. Secondarily, to characterize the referral time and frequency of resource use.
Methods: This is a 12-month retrospective cohort (2018/2019) consisting of electronic medical records of 48 individuals. Individuals

with LBP who had not received treatment in the PHC in the previous six months and aged >18 years were included. Those with red flag signs, limited mobility and pregnant women were excluded. Participants were stratified into groups: G1) People without referral and assistance (n:23); G2) People referred and assisted (n:15); G3) People who sought care without referral (n:10). We adopted multinomial logistic regression with backward stepwise to investigate whether age, sex, drugs and exams prescriptions, number of exams, consultations with specialists and other interventions adequately classify the groups G1 (reference), G2 and G3. There was no collinearity, and data fit was confirmed by the Akaike criterion. The pseudo-R^2 (Nagelkerke) demonstrated the weight of the variables in the model and the odds ratio (OR) was calculated with a 95% confidence interval (95%CI).
Results: The mean age was 55 years (SD: 13 years), and 75% were women. Of the total, 21% received imaging tests and 10.5% received drug prescriptions. The mean referral time until the first Physiotherapy appointment for LBP treatment (G2) was 99.5 days. The overall average of Physiotherapy visits was 6.5 sessions/person. Gender, age, number of consultations with specialists and other interventions explained 56% of the model (R^2). Compared to G1, the chance of being referred (G2) increased with increasing age (OR: 1.11 95%CI: 1.07;1.15), less number of consultations (OR: 0.26 95%CI: 0.10;0.91), less number of other interventions (OR: 0.21 95%CI: 0.05;0.91). The G3 was explained by female gender (OR: 17.1 95%CI: 3.3;88.8), age (OR: 1.24 95%CI: 1.17;1.31), and less number of consultations (OR : 0.06 95%CI: 0.11;0.39).
Conclusion: The time length for people with LBP to be treated after being referred to Physiotherapy was long. Age increments increased between 11% and 24% the chance of being referred and seeking care, respectively. The lower the number of consultations with specialists and other interventions, the greater the chance of being referred to Physiotherapy compared to people who are not referred. Women were 17 times more likely to seek Physiotherapy without a referral.
Implications: Our findings contribute to understanding the population profile and factors associated with referral to PHC Physiotherapists. We raise a caution note related to the delay in referral time is highlighted, which can cause deleterious clinical impacts.
Keywords: Low back pain, Primary health care, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: FEPECS/SES/DF, opinion n. 5,700,552

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IMPACTS OF AIR RESISTANCE IMPOSED BY RESPIRATORY FILTERS ON VOLUME AND FLOW VALUES DURING SIMULATED RESPIRATORY PATTERN

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Background: Pulmonary function and respiratory pattern exams are essential for the diagnosis of various diseases, such as COPD and asthma. Most equipment used in these exams is not sterilized, making the use of respiratory filters necessary for biological protection of the evaluated individual. However, the use of filters with high air resistance can alter the measurement of airflow and air volume during these evaluations. Thus, analyzing the influence of this resistance is important to ensure that the results of these exams can be reliable.
Objectives: To analyze the influence of the resistance of a respiratory filter on the flow and volume values collected in an innovative equipment used for the examination of the human respiratory pattern.
Methods: This is an experimental study. The measurement system consists of an Active Servo Lung (ASL) 5000 human breathing simulator; a respiratory filter holder for the KOKO spirometer; a respiratory filter for spirometry; and the Respiratory Diagnostic Assistant (RDA) device, developed by the LINDEF/UFPE laboratory for the evaluation of the respiratory pattern. The ASL 5000 was configured to simulate the normal respiratory pattern of a healthy adult individual. The settings were: respiratory frequency = 10 bpm; inspiratory time 2 s, expiratory time 4 s, I:E ratio = 1:2; tidal volume = 0.5L; airway resistance = 3cmH2O; lung compliance = 100mL/cmH2O; and muscle pressure = 15cmH2O. The breathing simulation was programmed to occur for 3 minutes, and thus, the ASL 5000 produced a total of 30 respiratory cycles, of which the flow and volume curves and respiratory pattern parameters were recorded by the RDA. This same procedure was performed twice, once with the presence of the filter membrane inside the filter holder, and another time without the presence of the filter membrane. The results were subsequently analyzed by the RDA Analysis software.
Results: With the addition of the filter to the system, there was a decrease from 84.46 L/min to 79.76 L/min in inspiratory flow and from 90.25 L/min to 85.76 L/min in expiratory flow, with a consequent reduction from 1323.63 mL to 1285.26 mL in inspiratory tidal volume and from 1293.73 mL to 1270.96 mL in expiratory tidal volume.
Conclusion: By comparing the mean values of inspiratory and expiratory flow and volume in the simulation of a basal respiration, it can be inferred that the resistance imposed by the filter added to the system produced considerable decreases in inspiratory and expiratory flow and volume values.
Implications: The differences obtained in this result are useful for compensation adjustments in the RDA software, aiming to correct this resistance imposed by the filter membrane, necessary during collection. Thus, this result will contribute to ensuring a respiratory pattern exam as close as possible to what the evaluated patient actually presents. It also brings reflection on the need to correct the volume and flow values obtained by other software responsible for the processing of respiratory pattern and pulmonary function data, which require the use of respiratory filters in their execution.
Keywords: Respiratory Filter, Respiratory Pattern, Pulmonary Function

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Not reported.

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AGREEMENT OF PHYSIOTHERAPISTS WITH DIFFERENT TIMES OF CLINICAL PRACTICE IN RELATION TO BODY STABILITY IN THE TRADITIONAL FRONT PLANK: PILOT STUDY

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Background: Newly graduated physical therapists have received up-to-date education and training in evaluating techniques and interventions, providing a new perspective, and understanding of the field. Physiotherapists with more time in practice have acquired extensive clinical experience in the assessment of individuals with changes in body stability. It is believed that the assessment of stability in the plank exercise will depend on professional education, training, and clinical experience.
Objectives: To evaluate the agreement of physiotherapists with different times of clinical practice in the assessment of body stability while performing the traditional front plank (TFP).
Methods: Cross-sectional experimental study. Healthy adults of both genders were included, with self-reported practice of moderate physical activity of at least 150 minutes a week and/or vigorous activity of at least 75 minutes a week, without reports of pain or history of injury or trauma, with previous experience in exercise of TFP, and not having performed physical exercise in the last 48 hours. After reading and accepting the Free and Informed Consent Term, the evaluation form was completed. To perform the TFP, the participants should remain for as long as possible with elbows and feet flat on the ground in line with the shoulders, hips and spine in a neutral position and posterior pelvic inclination. Based on this, a control form was prepared to record the classification of body stability by evaluators with different times of clinical practice. The form consisted of three items in which the evaluator selected only one to classify the TFP through video analysis. The items were: TFP performed with high stability, complying with all items described in the exercise for the entire period of time; TFP performed with moderate stability, complying with the items described in the exercise for more than 50% of the time; TFP performed with low stability, complying with the described exercise items for less than 50% of the time. The TFP exercise was filmed with a Sony Handycam DCR-SR65 camcorder at a distance of 2.5 meters from the subject. The same footage was sent to the recently graduated Physiotherapist and the other with seven years of clinical practice on day 1 and day 7. The Kappa Index was used for all analyzes of the degree of intra and inter-rater agreement, being interpreted: 0.81 to 1.0 – excellent; 0.6 to 0.8 – substantial; 0.4 to 0.6 – moderate; 0.2 to 0.4 – low; 0 to 0.2 – very low.
Results: 10 individuals were evaluated (five men and five women), with a mean age of 27.1 (±7.6) years, and mean body mass index of 23.4 kg/m^2 (±4.2). The analysis showed a low degree of agreement (Kappa=0.167) in the perception of a recently graduated Physiotherapist and an excellent one in the perception of the Physiotherapist with seven years of clinical practice (Kappa= 1.000), in different periods, in relation to body stability in the TFP.
Conclusion: Physiotherapists with different times of clinical practice differ in the agreement of the response in relation to body stability during the execution of the traditional frontal plank.
Implications: As this is a pilot study, the limitations are related to the sample size.
Keywords: Physical Exercise, Isometric Exercise, Professional Practice

Conflict of interest: The authors declare no conflict of interest.

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CORRELATION BETWEEN THE TIME OF EXECUTION OF THE TRADITIONAL FRONT PLANK WITH THE WEEKLY VOLUME OF PHYSICAL ACTIVITY: PILOT STUDY

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Background: The traditional front plank (TFP) promotes increased core muscle strength and endurance, promoting greater body stability and greater individual capacity to maintain the exercise for as long as possible. The time to perform an exercise and the weekly volume of physical activity (PA) may be related, but the nature of the relationship will depend on factors such as type of exercise, intensity, frequency, motivation and verbal reinforcement. It is known that physical performance in trained individuals is greater, suggesting that they have more experience and, consequently, greater motivation and mental conditioning compared to untrained individuals.
Objectives: To verify whether the execution time of the plank is influenced by the volume of moderate and vigorous PA (MVPA).
Methods: Cross-sectional experimental study. Healthy adults of both genders were included, with practice of moderate PA of at least 150 minutes a week and/or vigorous PA of at least 75 minutes a week (International Physical Activity Questionnaire - IPAQ), without reports of pain or history of injury or trauma, with previous experience in the TFP exercise, and not having performed physical exercise in the last 48 hours. After reading and accepting the Free and Informed Consent Term, the evaluation form and the IPAQ were completed. The execution order between the test with verbal reinforcement (WVR) and without verbal reinforcement (WoutVR) was defined by simple draw. Participants should remain for as long as possible in the TFP position, with elbows and feet resting on the ground in line with the shoulders, hips and spine in a neutral position and posterior pelvic inclination. The words of encouragement were standardized, "let's go, contract and maintain", associated with the participant's name and repeated firmly in an uninterrupted sequence. The evaluator monitored the vertical displacement of the participant's hip during the planks. Fatigue time was defined when vertical displacement of the hip exceeded 10 centimeters. The maximum execution time was defined at the moment of contact with the knees on the ground. Between runs, participants rested for 30 minutes. The relationships between fatigue time and maximum time with the weekly volume of MVPA were evaluated using Spearman's correlation. All analyzes considered a significance level of 5%.
Results: 10 individuals were evaluated, five men and five women, with a mean age of 27.1 (±7.6) years, and mean body mass index of 23.4 kg/m^2 (±4.2). The analysis showed a strong and positive relationship between time of fatigue while performing TFP WoutVR and weekly MVPA volume (rho=0.640), and a strong and positive relationship between performing TFP WVR and weekly MVPA volume (rho= 0.652).
Conclusion: The findings of this study indicate that the greater the volume of MVPA, the greater the time to reach fatigue during the execution of the plank WVR and WoutVR.
Implications: The limitations are related to the sample size
Keywords: Physical Exercise, Isometric Exercise, Verbal Reinforcement

Conflict of interest: The authors declare no conflict of interest.
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PERSPECTIVES ON NEW TECHNOLOGIES FOR PREVENTING AND DETECTING FALLS IN THE ELDERLY

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Background: Considering the challenges and benefits inherent to the Internet of Things for the elderly, the use of wearable devices to monitor health parameters, especially the risk of falls, could promote optimal conditions or prevent the deterioration of health conditions in aging. The use of these devices in the mapping of movement and gestures, loss of balance, postural changes, movement speed or loss by period of time, in daily tasks, in one or more movement axes, may determine gait parameters. In monitoring health conditions and the environment, in identifying the risk of falling when traveling across different terrains, slopes of roads, ramps, steps of different heights and dimensions, it may trigger a potential alert capable of promoting the perception of obstacles or barriers, minimizing the impact of coping with them and avoiding a fall, given the physical condition of the elderly person, in relation to the adversity of the environment.
Objective: Know the new technologies, wearable and non-wearable sensors, for detection and prevention of falls in the elderly.
Methods: A systematic mapping of the literature was carried out in the Virtual Health Library (VHL), Web of Science, Pubmed, Embase and Medline databases in March 2023.
Results: New technologies, wearable sensors and connected applications, in promoting the lives of the elderly, providing support for daily activities, is in increasing evolution. The technologies for detecting falls stand out, an important marker of the functional decline of the elderly, associated with sensory, neuromuscular or osteoarticular deficiencies. Different types of sensors and monitoring and alarm systems have been developed and can be used to alert caregivers. Sensors are electronic devices that allow transforming nature from an observed physical value into an exploitable digital value. The devices to activate an alarm are based on the monitoring of motor activity through one or several sensors, basic elements of data acquisition systems, informing the position of permanence of the elderly person after a fall. There is a diversity of sensors related to the collection of data on the physiological state, such as temperature, heart and respiratory rate, blood pressure; and movement measurement, such as accelerometers, gyroscopes, magnetometers. Also, geolocation and environmental measurement (audio and video). For fall detection, wearable sensors are more effective because they can identify changes in acceleration, planes of movement or impact, not being limited to a restricted area of movement of the elderly. These sensors can be located in shoes, insoles and on the wrist, registering movement; in belt, refer to attitude and direction; on a keychain or pendant with an alarm button, they alert an emergency; all connected to the app via smartphone.
Conclusion: Regarding sensors intended for the prevention or detection of falls, wearable and non-wearable sensors stand out, all with good results when tested in actions of daily life.
Implications: The technological variety intended to support the elderly, particularly in the prevention of falls, is promising. Challenges for adoption at scale seem to be the obstacle to important results in a real-life context.
Keywords: Elderly, Internet of Things, Falls

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PHYSICAL PERFORMANCE, MUSCLE STRENGHT AND ENDURANCE IN ADULTS AND ELDERLY PEOPLE WITHOUT PREVIOUS DISABILITIES AT HOSPITAL DISCHARGE FOR COVID-19

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Background: The COVID-19 pandemic has had an unprecedented impact on our health services, the population, society, and the economy. COVID-19 poses a risk of serious illness, hospitalization, and death. The hospitalization of these patients can be prolonged, and they are at risk of significant loss of muscle mass and function, even in a short period of immobility. This problem can be especially relevant in elderly patients.
Objectives: to verify the functional performance, quadriceps muscle strength and endurance in adults and elderly people without previous disability who were hospitalized for COVID-19 at the time of hospital discharge
Methods: This is a cross-sectional observational study, in which HU-UFSCar patients over 18 years of age were recruited at the time of hospital discharge, from August 2021 to December 2022. Anamnesis, assessment of functional performance by Short Physical Performance Battery (SPPB) and quadriceps strength and resistance by manual dynamometry.
Results: Thirty-four patients aged 58±14 years were evaluated, 16 of whom were adults and 18 were elderly. The length of stay was 8 (3-61) days, and 11 patients were on invasive mechanical ventilation, 7 of whom were elderly. The mean functional performance was 66% predicted for adults and 44% predicted for the elderly. The 4-meter gait speed and the 5-repetition sit-to-stand test were the components with the greatest impact on the decline in the total SPPB score. Regarding quadriceps isometric muscle strength, the results found were equivalent to 65±25% of predicted, 71% in adults and 57% in the elderly. Regarding the isometric resistance of the quadriceps, the median was 54 seconds, 55 seconds for adults and 48 seconds for the elderly.
Conclusion: It is concluded that patients who survived COVID-19, especially the elderly, whether or not they needed intensive care, had worse functional performance, reduced strength and isometric resistance of the quadriceps.
Implications: These results reinforce the importance of the participation of the physiotherapist in the decision of the patient's hospital

discharge, so that specific strategies and interventions are directed with the objective of early rehabilitation of the patient.
Keywords: Physical functional performance, muscle strength dynamometer, physiotherapy

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DEFINING TEXT NECK: A SCOPING REVIEW

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Background: Text neck is proposed to be one of the causes of neck pain and is regarded as a global epidemic. The term text neck emerged in 2008, and quickly spread through the media worldwide Yet, there is a lack of consensus concerning the definitions of text neck which challenges researchers and clinicians alike. A comprehensive synthesis of how text neck is currently defined may contribute to a better understanding of the term by researchers and clinicians.
Objectives: To investigate how text neck is defined in the peer-reviewed academic literature.
Methods: We conducted a scoping review to identify all articles using the terms "text neck" or "tech neck". Embase, Medline, CINAHL, PubMed and Web of Science were searched from inception to 30th April 2022. This scoping review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMAScR) guidelines No limitation was applied for language or study design. Data extraction included study characteristics and the primary outcome relating to text neck definitions.
Results: 41 articles were included. Text neck definitions varied across studies. The most frequent components of definitions were grouped into five basis for definition: Posture (n=38; 92.7%), with qualifying adjectives meaning incorrect posture (n=23; 56.1%) and posture without a qualifying adjective (n=15; 36.6%); Overuse (n=26; 63.4%); Mechanical stress or tensions (n=17; 41.4%); Musculoskeletal symptoms (n=15; 36.6%) and; Tissue damage (n=7; 17.1%).
Conclusion: There is substantial variability and lack of clarity in how text neck is defined in the peer-reviewed literature. The literature is characterized by definitions ranging from tissue damage and mechanical stress/tension to musculoskeletal symptoms, overuse and posture. Posture is the defining characteristic of text neck in academic literature and current definitions often mention inadequate posture and overuse. Clinicians and researchers should be aware of the lack of consensus on what constitutes text neck. Since there is neither consensus on the definition nor scientific evidence to support any of the proposed definitions, the term text neck seems to have no clinical value at the present moment.
Implications: From a clinical perspective, text neck seems to be of no scientific value since there is no association between the flexed posture adopted during texting on smartphones and neck pain. Text neck is not an accepted diagnosis and does not seem to be a risk factor for neck pain. pain. From a research perspective, the definition of text neck as a habit of texting on the smartphone in a flexed neck position, regardless of whether the person has neck pain, may be of scientific value for new studies.
Keywords: Neck pain, Smartphone, Posture

Conflict of interest: The authors have no conflicts of interest.
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VALIDITY AND RELIABILITY OF THE MOTOR ASSESSMENT SCALE FOR REMOTE ASSESSMENT OF INDIVIDUALS AFTER STROKE – PRELIMINARY RESULT

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Background: After stroke many patients remain with difficulties in using the upper limbs, balance, transfers, and walking. The Motor Assessment Scale (MAS) assess the movements needed to do those activities. Social restrictions to combat the Covid-19 pandemic have increased the telerehabilitation, but the remote assessment is also important for rural areas or geographic regions where neurorehabilitation specialists are scarce, and when patients have difficulties on transport to the clinic. Although the measurement properties of the MAS applied in person are established, the validity and reliability of the MAS applied via teleconsultation is unknown.
Objectives: To investigate the validity and reliability of the *Motor Assessment Scale* (MAS) when administered remotely by videoconference (Tele-MAS).
Methods: This is a study of investigation of measurement properties, following the recommendations of COSMIN, for validity and reliability of Tele-MAS. The sample was 18 participants with a diagnosis of stroke, Braztel-MMSE score $\geq$13 points and with internet access and mobile device. The order of the evaluations (remote or in person) was randomly defined. The application sequence of the MAS items was adapted to allow remote application in addition to verbal commands during the evaluation and a specific instruction manual for application by videoconference was developed. For assessment by videoconference (rater A and B) the participant was instructed to position the camera in a way that the therapist can observe from the ground to above the head. The raters are positioned similarly to the participant to demonstrate the items and score synchronously. The application in person takes place in the participant's house, by rater A. The three collections took place within a period of eight days, with an interval of 2 days. The validity between the in person and remote evaluation was analyzed by Pearson's correlation coefficient and the reliability between the remote and in person evaluation was analyzed using the Bland-Altman limits of agreement. The interrater reliability for the sum of the score of the items was analyzed by the Intraclass Correlation Coefficient

(ICC) with a confidence interval of 95% (95%CI). Data were analyzed using MedCalc software®.
Results: A strong positive correlation (r=0.96; 95%CI=0.90-0.99) was found between the MAS and Tele-MAS scores. The analysis of the Bland-Altman graph for the total MAS scores indicated that the mean difference between in person and remote scores was -0.6 points. The 95% limits of agreement are +6.5 and -7.6 points. Excellent interrater reliability (ICC≤0.94; 95%CI =0.84-0.98) of the total Tele-MAS score.
Conclusion: The preliminary results indicate that Tele-MAS should be considered as a valid measure and has interrater reliability.
Implications: MAS is widely used in clinical practice, however, the measurement properties of the remote version applied by videoconference were unknown. The results of the final study should present the validity and reliability of Tele-MAS to remotely assess post-stroke motor function through videoconference.
Keywords: Stroke, Motor Assessment Scale, Teleconsultation

Conflict of interest: The authors declare no conflict of interest.
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COSTS OF HOSPITALIZATION OF NEWBORN INFANTS WITH DIFFERENT HEALTH CONDITIONS IN A REGIONAL HOSPITAL IN BRASÍLIA IN 2018

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Background: About 30 million newborns (NB) born annually in the world require hospitalization, increasing costs in health systems. Characterizing the costs of health conditions enables a more complete and detailed study about public expenditures, helping to determine priorities and making it possible to guide actions in the context of the public health system.
Objectives: To compare and analyze the costs of hospitalizations among different health conditions in NBs at a public hospital in Brasília in 2018.
Methods: A cost of illness study with a top-down approach and an economic perspective of the public health system (SUS) as a service provider. Sample consisting of 1689 children, with different health conditions born at Hospital Regional da Ceilândia, Brasília, in 2018: a) prematurity (n = 133); b) bacterial septicemia (n = 112); c) respiratory conditions (n = 116); d) jaundice (n = XX); e) infection of the newborn (IPRN) (n = XX). Direct costs (in reais), divided into costs of hospital services and professional services, were estimated based on payment data entered in the Hospital Admission Authorization. To compare costs between different health conditions, the Kruskall-Wallis Test was used (p≤0.05) and Mann-Whitney test as post hoc.
Results: The total costs of hospital and professional services, respectively, for the different health conditions were: bacterial septicemia (R$300,614.70; R$45,204.35); prematurity (BRL 299,033.21; BRL 46,388.86); respiratory conditions (R$225,366.37; R$29,542.33); jaundice (R$197,581.95; R$28,508.03) and IPRN (R$171,591.59; R$25,024.59). The difference between hospital costs and professional costs was observed in all health conditions in the study, evidencing the high cost related to hospital services compared to professional services. Although jaundice and IPRN represent, together, the highest frequency among the analyzed conditions with approximately 78.54% of the total number of hospitalizations, septicemia and prematurity were the conditions with the highest total cost value (adding together hospital and professional services), the cost for septicemia being higher compared to jaundice (p≤0.000) and IPRN (p≤0.017). Prematurity had a higher cost than jaundice, IPRN and respiratory conditions (p≤0.000), whereas respiratory conditions had a higher cost than jaundice (p≤0.000) and IPRN (p≤0.000). Specifically in professional services, prematurity had a higher cost than all other conditions (p≤0.000). Jaundice did not show statistical differences compared to IPRN (P≤0.601) but had lower costs than septicemia (p≤0.000) and respiratory disorders (p≤0.000). Finally, IPRN had a lower cost compared to septicemia (p≤0.000) and respiratory conditions (p≤0.000). There was a predominance and a high number of NICU days and longer stays related to prematurity, bacterial septicemia and respiratory disorders, as well as a greater need for physical therapy assistance, nutritional therapy and imaging tests.
Conclusion: It was concluded that the conditions with the highest cost for the analyzed hospital were prematurity, followed by bacterial septicemia and respiratory conditions.
Implications: The high cost for the health system of conditions associated with newborns is evidenced, emphasizing the importance of preventing neonatal complications to reduce costs and improve quality of life.
Keywords: Hospitalization Costs, Newborns, Economic analysis

Conflicts of interest: The authors declare no conflict of interest.
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INFLUENCE OF PHYSICAL ACTIVITY ON DEPRESSIVE SYMPTOMS IN ELDERLY IN THE COMMUNITY

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Background: Aging is a natural phenomenon that is part of human development and is characterized by the accumulation of molecular and cellular changes that lead to a decline in capacities. The search for new knowledge about the elderly has shown that the vulnerability caused by the aging process makes these individuals susceptible to various pathologies, such as depression. The practice of physical activity is indicated as an alternative non-pharmacological treatment in many situations/diseases and is described as any body movement performed by skeletal muscles, which generates energy expenditure, favoring the production of new neurons and facilitating synaptic connections. Considering that depression is a prevalent pathology and that the practice of physical exercises is a non-pharmacological possibility of control, it is important to know if practice interferes with the reduction/control of depressive symptoms.
Objectives: To verify whether the practice of self-reported physical activity is related to symptoms of depression in elderly people living in the community.

Methods: Individuals over 60 years of age of both sexes were included in the study, and a questionnaire was applied to collect personal data where the participant answered about their habits and physical activity practices. The assessment of depressive symptoms was performed using the Geriatric Depression Scale (GDS), The score ranges from 0 (absence of depressive symptoms) to 15 points (maximum score of depressive symptoms). To analyze the data, comparisons were performed using unpaired t-test, correlations were performed by Pearson's correlation test, and statistical significance was defined as $p \leq 0.05$.
Results: The sample consisted of 139 seniors with a mean age of 70.06±5.90. The statistical analysis showed a correlation between the practice of self-reported physical activities and the GDS among women (r= - 0,303; p< 0,007) and among men (r= - 0,30; p= 0,01). Analyzing the entire sample, it was found that the practice of exercises predicted the occurrence of depressive symptoms [[F (1,137) = 14,543; p<0,0001; R^2= 0,08]. A significant difference was observed in the GDS scores between the group of practitioners of physical activity and the group of non-practitioners (2.90±2.02 and 4.81±3.00, respectively; p<0.0001).
Conclusion: It was possible to conclude that there was an influence of the practice of physical activities on the symptoms of depression in the elderly evaluated and that the practicing group had lower scores in the GDS than the non-practicing group.
Implications: The observed results can contribute to public health, making it possible to create early actions to maintain the quality of life of these individuals, being important of attention and investment in preventive health actions.
Keywords: Aging, Depression, Physical activity

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Study approved by the Research Ethics Committee of the Faculty of Philosophy and Sciences – Sao Paulo State University, under protocol n° 4.168.934

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IS THERE A DIFFERENCE BETWEEN THE SEX IN PAIN INTENSITY AFTER 1 SESSION OF MANUAL THERAPY IN PEOPLE WITH CHRONIC LOW BACK PAIN?

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Background: Chronic low back pain (CLBP) is a very common symptom experienced by people of all ages and is considered the leading cause of disability in the world. Its global prevalence is 7.3%, that is, 540 million people are affected by the condition, with an increase of 54% since 1990. In some studies, the prevalence of CLBP was higher in women (60.9%) than in in men (39.1%). Most recommended treatments for CLBP (with moderate and high evidence) have small effects, including pharmacological solutions such as the use of opioids. Among the available treatments, manipulative therapy is one of the possibilities, as they have hypoalgesia effects similar to those observed for other therapies recommended by guidelines. In the present study, we evaluated whether there is a difference in pain intensity between men and women before and after manipulative therapy using the Numerical Pain Rating Scale.
Objectives: To identify if the is a difference in pain intensity between men and women with CLBP after a manipulative therapy session.
Methods: this is a cross-sectional and secondary study based on data from a randomized clinical trial that offers manipulative therapy as a treatment for patients with CLBP. At the first meeting, the patients were evaluated regarding: sociodemographic aspects such as sex, age, weight, height, income, and education; pain intensity.
Results: So far, 128 patients with non-specific CLBP have participated in this study, totaling 64 females and 64 males. The average age of the male (M) sample was 44 years (SD=9.49) and female (F) 45.5 years (SD=8.78), with an average weight of M=87 kg (SD=15.68) and F=76.5 kg (14.49), average height of M=178.5 cm (SD=23.15) F=162 cm (SD=5.97). All data were tested for normality using the Shapiro-Wilk test. An analysis of variance (ANOVA) of repetitive measures was applied. The intra- and between-subject factors were time (period before and after 1 session of manipulative therapy) and Group (men and women), respectively. The post-hoc test using the Bonferroni correction was used when a significant interaction was found.
Conclusion: There was no interaction between gender and pain intensity after a manipulative therapy session. Both sexes showed significant improvement after a manual therapy session (P<0.05). Among men, 32 subjects showed clinically significant improvement in reducing pain intensity. Among women, this number was 39 people.
Implications: These results bring information about the characteristics of the sample.
Keywords: Chronic Low Back Pain, Manipulative Therapy, Sex

Conflict of interest: The authors declare to have no conflict of interest.
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COMPARISON OF VERTEBRAL SEGMENTAL DYSFUNCTIONS BETWEEN INDIVIDUALS WITH CHRONIC GASTRITIS AND HEALTHY INDIVIDUALS

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Background: Recent research has suggested associations between the presence of visceral dysfunctions and the occurrence of musculoskeletal disorders, particularly in the vertebral column. Chronic gastritis is one of the most common visceral dysfunctions in clinical practice, and this dysfunction causes restrictions in visceral motility and mobility, compromising the normal functioning of the organ and, consequently, potentially leading to musculoskeletal repercussions.
Objectives: The aim of this study was to compare musculoskeletal dysfunctions of the spine between adults diagnosed with chronic gastritis and healthy individuals.
Methods: This is a pilot study of an observational cross-sectional design. Forty participants were included and randomized into a gastritis group (GG = 20), consisting of individuals diagnosed with chronic gastritis, and a comparison group (GC = 20), consisting of healthy individuals. The assessment was performed manually. Tenderness upon palpation of the spinous processes of vertebrae C2, C3, C4, T5, T6, T7, T8, and T9 (sclerotome) was evaluated by palpating the spinous processes, and participants were asked to report

the presence or absence of pain. The density and texture of the soft tissues adjacent to the occipital region (suboccipital muscles) and C1-C4 and T5-T9 vertebrae (paravertebral muscles) were assessed by palpating the soft tissues immediately lateral to the spinous processes of the vertebral column and the occipital bone. Asymmetry of the occipital and vertebral (C1-C4 and T5-T9) regions was assessed as follows: for the occipital region, the evaluator, with their fingers placed on the occipital bone, determined if one side was more posterior than the other. For the C1-C4 and T5-T9 segments, the evaluator located the transverse processes of the cervical and thoracic vertebrae and identified posteriority through palpation. Vertebral mobility of C1-C4 was assessed by evaluating two main movements, lateral flexion, and vertebral rotation. For vertebral mobility of T5-T9, rotational movements of the vertebrae were investigated.
Results: The GG exhibited greater restriction in lateral gliding and left rotation mobility at the vertebral levels between C2 and C4 and T6 and T9, as well as increased pain (at C3 to C4 and T7 to T9), muscle tension (at all levels), and vertebral asymmetry (at C2 to C4 and T7 to T9) compared to the GC, with a significance level of $p<0.05$.
Conclusion: Individuals with chronic gastritis showed reduced left-sided vertebral rotation mobility in the cervical and thoracic spine, as well as decreased left-sided vertebral lateral gliding mobility in the cervical region. Additionally, they exhibited increased pain at the spinous process, right-sided vertebral transverse process asymmetry, and increased muscle tension adjacent to the right-sided vertebrae in the thoracic and cervical regions, compared to healthy individuals.
Implications: It is of paramount importance to investigate the relationships between the viscera and the musculoskeletal system, as it can help prevent potential associated musculoskeletal dysfunctions and promote a more comprehensive alternative treatment through osteopathy, chiropractic, or other approaches.
Keywords: Gastritis, Posture, Range of motion

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: We would like to thank the collaboration of patients who were willing to participate in the research.
Ethics committee approval: Federal University of Pernambuco, CAAE:74848117.0.0000.5208

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FINE MANUAL DEXTERITY OF CHILDREN WITH AUTISM SPECTRUM DISORDER AND WITH TYPICAL DEVELOPMENT THROUGH IDADI

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Background: Autism affects 1 in every 160 children in the world. It is estimated that there are about 2 million people within the spectrum in Brazil. Its diagnosis is based on the presentation of the disorder, since there is no biological marker, which led to the emergence of numerous international instruments for screening and more assertive diagnosis. In Brazil, the use of these instruments is limited by translation, validation, psychometric quality and by the large geographic dimension that can, for example, generate different motor repertoires among children of the same age group due to the great diversity between the regions of the country. So far, only one study used the Dimensional Inventory of Child Development Assessment (IDADI), created in Brazil, to assess fine motor skills in children with Autism Spectrum Disorder (ASD), but without including the population of the northern region of Brazil.
Objectives: To compare the fine motor skills of children with ASD and those with typical development using the Dimensional Inventory for Child Development Assessment.
Methods: This is a descriptive and observational study with a cross-sectional design developed in Pará. Data collection was carried out by four researchers online or in person, divided into two groups: children with ASD and children with typical development. The instrument uses the parental report of mothers or other family members of daily contact with the child who had a clinical diagnosis (in all degrees) of Autistic Spectrum Disorder determined by a licensed professional (psychologist or physician), and the age group was used between 24 and 72 months. The group of typically developing children were in the same age group and scored less than 15 on the Social Communication Questionnaire, indicating no risk of ASD. For the assessment of fine motor skills, the standardized score of the IDADI fine motor domain was used.
Results: 66 children participated in the study, 22 diagnosed with ASD and 44 with Typical Development. A significant difference was observed comparing the fine motor skills of children with ASD (69.5 ± 19.6) with children with TD (98.2 ± 19.0), with statistical difference between groups ($p<0.0001$), with large effect size ($d=1.48$).
Conclusion: We carried out the analysis of fine motor skills in child development through the Dimensional Inventory of Child Development Assessment, created in Brazil, comparing children with TD and ASD, and our results confirmed that children with ASD have significantly lower scores than typical children when compared fine motor skills between children with ASD and with typical development.
Implications: Motor abnormalities are usually the first sign of atypical development in ASD and can be detected before social and language disorders, being able to significantly affect other aspects of child development. In addition, impaired fine motor skills can be predictors of ASD severity, making detection essential to enable effective interventions for this population.
Keywords: Autistic Spectrum Disorder, Motor Skills, Motor behavior

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: We thank God, our families, the Graduate Program in Human Movement Science and all the families who participated in the study.
Ethics committee approval: Ethics Committee for Research with Human Beings of the Federal University of Pará: Number: 5,384,086.

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CAPACITY OF PHYSICAL AND NON-PHYSICAL CHARACTERISTICS IN PREDICTING OBJECTIVE FUNCTION OF WOMEN WITH PATELLOFEMORAL PAIN

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Background: Patellofemoral pain (PFP) is a chronic musculoskeletal disorder characterized by an insidious and diffuse pain around and/or behind the patella. People with PFP have decreased levels of physical activity and muscle strength of the knee extensors, as well as higher levels of pain, kinesiophobia, and body mass index (BMI).

In addition, people with PFP experience decreased performance during objective function tests, such as the single leg hop test (SLHT). Although, theoretically, all the alterations above mentioned may be contributing to the decreased SLHT performance of individuals with PFP, no study has investigated this to date.
Objectives: To determine the capacity of physical activity level, BMI, pain level, kinesiophobia and muscle strength of knee extensors in predicting SLHT performance of people with PFP.
Methods: Sixty-two women with PFP were included in this study. Demographic data, level of physical activity (Baecke questionnaire), kinesiophobia (Tampa Scale) and average pain in the previous month (Visual Analogue Scale – 0 to 100 mm) were obtained. The objective function was evaluated with the SLHT, in which participants were required to hop forward as far as possible and the distance in centimeters was obtained. The concentric strength of the knee extensors was obtained with an isokinetic dynamometer at 60°/s. A multiple linear regression was performed to determine the capacity of muscle strength, kinesiophobia, BMI, pain and the level of physical activity in predicting the objective function of women with PFP.
Results: None of the independent variables (i.e., concentric knee extensor strength, Kinesiophobia, Pain, Physical activity level, BMI) were able to significantly predict the SLHT performance of women with PFP ($F_{(5,56)}$=0.328; p=0.884; R^2=0.028).
Conclusion: Despite the theoretical plausibility, the variables investigated in this study were not able to significantly predict the SLHT performance of women with PFP. It is possible that other variables not investigated in this study, such as the strength of the hip extensors, and the rate of torque development of the knee flexors and extensors may present with better predictive capacity. However, future studies are needed to confirm or refute this hypothesis.
Implications: As none of the variables were able to explain the performance of women in SLHT, it remains inconclusive why they present a decreased performance on this task compared to asymptomatic individuals.
Keywords: Patellofemoral pain, Objective function, Performance

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: The study was approved by the Ethics and Research Committee of FCT-UNESP (approval number 4,649,629).

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ASSESSMENT OF THE FUNCTIONALITY OF HOSPITALIZED ELDERLY INDIVIDUALS AND IDENTIFICATION OF THEIR DISABILITIES

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Background: Hospitalization-associated disability (HAD) results from the impact of acute illness and hospital factors and can affect 1/3 of the elderly. This context reflects functional dependency and increased consumption of health resources. Clinical tests applied in the hospital environment help quantify the effects of acute illness and hospitalization.
Objective: To evaluate the impact on functionality of hospitalized elderly by means of clinical tests and to assess their correlations.
Methods: Cross-sectional study with 40 elderly patients hospitalized for acute illness and who were ambulating independently 2 weeks before admission. Variables assessed: manual grip strength (MPF) (it was considered as weakness below 27 kgf for men and 16 kgf for women), Short Physical Performance Battery (SPPB) test (evaluates balance, speed and strength with scores from 0 to 12) and gait speed at admission and at discharge.
Results: Of those evaluated, 25 were male, mean age was 77 ± 7 years, mean length of stay 8 ± 6 days. At admission, FPM: 22 ± 9 kgf, SPPB score: 7 ± 4 and walking speed: 0.65m/s ± 0.25. At hospital discharge: FPM: 21 ± 9 kgf, SPPB score 8 ± 4 and gait speed 0.60 ± 0.23m/s. There was no statistically significant difference between FPM and gait speed at admission and at discharge ($p > 0.05$). Only the SPPB showed statistical and clinical significance ($p = 0.02$). Length of stay correlated negatively with FPM (p=0.11, r=-0.26) and SPPB (p=0.12, r=-0.25). FPM correlated with SPPB (p=0, r=0.58) and with gait speed (p=0, r=0.71).
Conclusion: Average of 8 days of hospitalization was not enough to reduce the functionality of the hospitalized elderly by the applied tests, however, there is correlation between loss of strength and functional loss.
Implications: FPM, gait speed and SPPB may be useful tools to assess the functionality of hospitalized elderly.
Keywords: Activities of Daily Living, Hospitalization, Patient Discharge

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Ethics committee approval: Universidade Federal de Minas Gerais. 59900222.6.0000.5149

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PREVALENCE OF DCD AMONG SCHOOL CHILDREN FROM 6 TO 10 YEARS OF AGE: COMPARISON BETWEEN TWO BRAZILIAN REGIONS

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Background: Developmental Coordination Disorder (DCD) is characterized by a significant delay in the acquisition and execution of motor skills, impacting children's daily activities and school performance. The most recent prevalence estimates indicate that this disorder affects between 5 and 6% of school-age children. Therefore, we emphasize the importance of investigating the prevalence of DCD in different Brazilian regions.
Objectives: To explore the prevalence of risk for DCD and probable DCD in children aged 6 to 10 years from two Brazilian regions.
Methods: 199 children aged 6 to 10 years old from public schools in the South (n=89) and Southeast (n=108) regions of Brazil participated in this cross-sectional study. Parents/guardians signed the informed consent form under ethics approval. For screening and identification of alterations in motor function, the Movement Assessment Battery for Children (MABC-2) was used, following all the criteria for the diagnosis of DCD recommended in the literature. The assessment was conducted in schools by trained professionals with experience in motor assessment. Prevalence of risk (≤15% percentile) and probable DCD (≤5% percentile) in both regions was calculated and analyzed descriptively. MABC-2 total scores and component scores were compared by region using t-tests, with a significance level of 5%.
Results: The sample of this study consisted of 54.3% girls with a mean age of 7.95 (± 1.34) years and 45.7% boys with 7.88 (± 1.47) years. There were no differences between the mean age and sex

distribution of participants between regions. No differences were found between regions in the total MABC-2 scores (p= 0.28). When analyzing the components of the instrument, the regions showed differences in the following domains: Manual Dexterity (p= 0.002), Aiming and Catching (p=0.01) and Balance (p= 0.01). It was observed that in the Balance component score, children from the South region had higher average scores compared to children from the Southeast region. Children from the Southeast region had higher average scores compared to children from the Southern region in Aiming and Catching and Manual Dexterity. In children from the Southern region of Brazil, 10.1% of the participants had probable DCD and 18% were at risk for DCD. Therefore, 71.9% had a typical motor development. A higher prevalence was found in the Southeast region, with 27.3% of children with probable DCD, 7.3% risk and 65.5% with typical motor performance.
Conclusion: The prevalence of DCD and the scores of children in specific motor domains were different across South and Southeast regions of the country. Thus, exploring other contextual factors that may have contributed to these findings is warranted.
Implications: The present study made progress towards identifying differences in the motor profile of children from two different regions of the country. Collecting representative data from other regions of the country will help to understand possible variations in motor performance according to the context where the child is inserted.
Keywords: Children, Motor skills, Developmental Coordination Disorder

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: National Council for Scientific and Technological Development (CNPq), Research Support Foundation of the State of São Paulo (FAPESP).
Ethics committee approval: Federal University of São Carlos - CAAE: 55391722.5.0000.550/52286421.0.0000.5504

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IS THERE AN ASSOCIATION BETWEEN UPPER LIMB FUNCTION, FATIGUE AND QUALITY OF LIFE IN INDIVIDUALS WITH MULTIPLE SCLEROSIS? CROSS-SECTIONAL STUDY

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Background: Changes in the functions of the upper limbs in individuals with multiple sclerosis are prevalent and present themselves as a common complaint that limits the performance of basic and instrumental activities of daily living, considering the quality of life.
Objectives: To describe upper limb performance, quality of life and perception of fatigue in people with multiple sclerosis and identify possible relationships between variables.
Methods: Descriptive cross-sectional study, with a non-probabilistic and courtesy sample, comprising two groups; people with multiple sclerosis, of both sexes and aged between 18 and 60 years and the second with healthy individuals, matched by age and sex. Recruitment through contact with associations of people with MS and wide dissemination, with posters and folders, in health services. Personalized assessment, including sociodemographic data; performance of the upper limbs through the Test d'Évaluation des Membres Supérieurs des Personnes Âgées instrument, which is composed of eight standardized tasks, which simulate daily activities scored through the sum of the time spent to perform them; quality of life using the Functional Determination Scale of Quality of Life in patients with MS composed of six domains: mobility, symptoms, emotional state, personal satisfaction, thinking and fatigue, social and family situation with scores ranging from 0 to 176; and fatigue with the Modified Fatigue Impact Scale (MFIS) instrument, which has 21 items and determines the effects of fatigue on cognitive, physical and psychosocial factors, its score varies from 0 to 84. The application of the instruments will be random for each participant. Statistical analyzes using descriptive measures to characterize the sample. To compare means between groups, Student's t-test or similar non-parametric test. Multiple linear regression, adjusted for gender and disease duration variables, to determine the possible influence of upper limb performance on quality of life and on fatigue. Excerpt from the clinical trial approved by the ethics committee (Opinion 4,918,584).
Preliminary Results: From May to October 2022, 11 subjects were included in the study. The mean age of the participants was 35.73± 9.76, the mean education was 16 ± 2.36 years of study and the mean time since diagnosis was 6.6 ± 4.58 years. Pearson's expressive test showed that there was no positive relationship between performance in the upper limb test and quality of life (r=-0.024 p=0.94) and positive and weak between upper limb function and fatigue (r= 0 .27 p=0.41), quality of life and fatigue had a negative and moderate voice (r=-0.46 p= 0.15).
Conclusion: Although none of the correlations presented was statistically significant, there is an attempt to that the better performance of the upper limbs is related to a lower perception of fatigue, as well as a higher quality of life index.
Implications: An ongoing study, investigating the evolution between the variables and how they can influence each other, may present interventions for intervention in upper limbs.
Keywords: Upper Extremity, Multiple Sclerosis, Quality of Life

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Association of People with Multiple Sclerosis DF (APEMIGOS), Association of Special Physical Education Training Center (CETEFE), University of Brasilia and Health Department DF.
Ethics committee approval: This project was approved by the Research Ethics Committee of the Faculty of Ceilândia (CEP/FCE) of the University of Brasília by Opinion 4,918,584

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USE OF THE WHODAS QUESTIONNAIRE TO SCREEN FOR PHYSICAL INACTIVITY IN PATIENTS WITH COPD

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Background: COPD is described as a progressive and persistent airflow limitation, with the presence of pulmonary and extrapulmonary manifestations such as dyspnea, reduced exercise capacity and muscle weakness, which impairs functional performance and physical activity as the disease worsens. The functional performance can be assessed by the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0) questionnaire, as it is an instrument that encompasses biopsychosocial principles according to the International Classification of Functioning, Disability and Health, however there is no knowledge whether this instrument can track physical inactivity in this population.

Objectives: To verify the correlation between WHODAS questionnaire score and physical activity levels in people with COPD.
Methods: This is a cross-sectional study, which assessed 35 patients with COPD, aged over 50 years (21 males, 69±8 years, FEV_1/FVC 56 ±13%, FEV_1 post-Bronchodilator 50 ± 13%). This study was approved by the Research Ethics Committee of the Federal University of São Carlos (UFSCar), under number 85901318.0.0000.55.04. To evaluate functionality, the WHODAS 2.0 questionnaire, with 36 items was applied in the interview format. The level of physical activity was assessed by the actigraph activPAL3TM (Pal Technologies Ltd., Glasgow, United Kingdom), for 7 consecutive days, by time spent sitting, standing and walking; number of steps and time spent at certain exercise intensities (sedentary, if MET <1.5 and low intensity exercise, if MET >1.5, but < 3). Participants who could not perform the proposed tests and/or had difficulty understanding the questionnaire were excluded. For data analysis and correlation, the statistical software SPSS version 21 (2012) was used, with significance established at a p value <0.05.
Results: Significant correlation were found only between the mobility domain of WHODAS 2.0 and number of steps (r= -0.490; p=0.003), sitting time (r=0.472; p=0.004), standing time (r= -0.366; p= 0.031), walking time (r= -0.510; p= 0.002), time during MET < 1.5 (r= 0.426; p= 0.011) and time during MET >1.5, but < 3 (r= -0.428; p=0.010).
Conclusion: The WHODAS 2.0 mobility domain showed association with the variables that reflect the level of physical activity and sedentary time in COPD patients, thus the instrument may be effective to track physical inactivity in this population.
Implications: This study shows that the WHODAS 2.0 questionnaire is an effective tool for tracking the level of physical activity in COPD patients and can be used as a clinical outcome before and after physical therapy intervention.
Keywords: Functionality, Sedentary Behavior, Physiotherapy

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To the participants, to the physiotherapy department at UFSCar, and Fundação de Amparo à Pesquisa do Estado de São Paulo for the support.
Ethics committee approval: Research Ethics Committee of the Federal University of São Carlos (UFSCar), under number 85901318.0.0000.55.04.

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FRAGILITY PROFILE OF ELDERLY PEOPLE WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE RESIDENTS IN THE COMMUNITY

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Background: In Chronic Obstructive Pulmonary Disease (COPD), symptoms of chronic and progressive dyspnea, cough and sputum production impact exercise tolerance and functionality. Being mostly elderly, the risk for frailty also has a great clinical impact. However, it is not routinely investigated in people with COPD, which may lead to less impact of functional dependence prevention strategies. Thus, the stratification of elderly people with COPD into frailty profiles can provide important prognostic information, enabling the development of prevention, promotion, and rehabilitation actions in health.
Objectives: Stratify the frailty profiles of community-dwelling elderly with Chronic Obstructive Pulmonary Disease.
Methods: 25 community-dwelling elderly (68.9±6.54) with a diagnosis of COPD who answered the Vulnerable Elders Survey -13 (VES-13) questionnaire, present in the elderly person's health booklet, were included to stratify the vulnerability profile. The categories of the Comprehensive International Classification of Functioning (ICF) Core Set for COPD to detail functional limitations and disabilities were evaluated based on the response to the VES-13.
Results: The study included 25 elderly people with COPD, with a mean age of 68.9 years. As for vulnerability classification, 12 (48%) volunteers had a robust elderly profile, 8 (32%) elderly people had a pre-frailty profile, and 5 (20%) volunteers had a frail profile. No significant correlation was found between VES-13 and age, BMI, calf circumference, FEV1/FVC, physical activity, falls, unintentional weight loss. Regarding the ICF Core Set for COPD, the relevance of the categories found in the present study is highlighted, with difficulty or inability to perform household tasks, to walk, and difficulty or inability to make basic changes in body position, more specifically difficulty or inability to crouch.
Conclusion: Elderly people with COPD who live in the community have a higher prevalence of pre-frailty and affection. However, this parameter was not presented with other parameters that impact functional independence. Thus, the tracing of traffic in people with COPD residing in the community still needs to be deepened considering the different mobility conditions of this population.
Implications: The findings may guide the development of interventions that can lead to better management of frailty in this population. In addition to facilitating the implementation of interventions capable of preventing functional independence.
Keywords: Functional Status, Fragility, Elderly

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: João de Barros Barreto University Hospital of the Federal University of Pará. Opinion N° 5.309.843.

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TRANSITION FROM THE BIOMEDICAL TO THE BIOPSYCHOSOCIAL MODEL IN EXERCISE INTERVENTIONS FOR OLDER ADULTS WITH LOW BACK PAIN: AN INSTRUMENTAL ANALYSIS

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Background: Chronic low back pain (CLBP) is the second most common complaint in Brazilian elderly and the 4th most disabling musculoskeletal disorder in the world, affecting different areas of the lives of people with this condition. The International Classification of Functioning, Disability and Health (ICF) guides an approach that integrates in the care model the domains of structure and function, activities/participation, personal and environmental aspects. Therefore, an approach following the biopsychosocial model (BPS) becomes more adequate when compared to the biomedical model, based on the ICF recommendations.
Objectives: To analyze the transition from the biomedical to the BPS model in exercise interventions for older adults with CLBP.
Methods: A search was conducted in June 2022, without date restriction, in 3 databases (PubMed/MEDLINE, PEDro and Scielo) using the descriptors "chronic low back pain", "elderly", "exercise",

"disability" and synonyms. The articles were selected in two stages. First, there was selection by means of titles and abstracts based on the objective. The studies were read in the second phase and selected using the eligibility criteria: clinical trials, elderly with CLBP, and exercise. Each item of the measurement instruments was analyzed according to the first level of the CIEZA flowchart (CIEZA et al., 2019), which considers the ICF domains in its composition. Transition to the BPS model was considered if the measurement instruments of the studies had items that assessed body structure and functions with at least one more of the ICF domains described in level 1 of the flowchart. And the biomedical approach when the instrument represented only body structure and functions. The search and selection of the studies were developed by two independent reviewers (D, V), as well as the extraction and analysis of the data (descriptive).
Results: 515 studies were identified, 15 included, with publication year ranging from 2000 to 2020. The primary outcomes of the studies included: pain (intensity, catastrophizing, and perception), kinesiophobia, disability, quality of life, self-efficacy, self-care, physical activity and fear. The secondary ones were fall efficacy, sleep, general health, mobility. Thirty-one instruments were extracted, 23 (74.19%) evaluated concepts linked to the structure and function domain, 18 (58.06%) personal factors, 11 (35.48%) activity and participation, and 4 (12.9%) environmental factors. The distribution of the items of the instruments evaluated according to the CIEZA flowchart indicated that 100% of the studies were making the transition to the BPS model.
Conclusion: There is a transition from the biomedical model to the BPS model in all the studies including elderly people with CLBP. However, there is a predominance of the evaluation of the body structure and function domain, compared to the other ICF domains, in the measurement instruments.
Implications: Although there has been a transition to the BPS model, we suggest using more tools that involve activity and participation domains, environmental factors, and personal factors as outcome measures for exercise studies conducted with older adults with CLBP.
Keywords: Chronic low back pain, Elderly, Disability

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Ethics committee approval: Not applicable.

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CARDIAC AUTONOMIC FUNCTION AND FUNCTIONAL CAPACITY IN POST-COVID-19 INDIVIDUALS WITH SYSTEMIC ARTERIAL HYPERTENSION

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Background: The COVID-19 is a recent and highly contagious disease. Individuals diagnosed with systemic arterial hypertension (SAH) are considered risk groups and may have a stronger association with higher level of COVID-19 severity and increased mortality. Furthermore, individuals infected with COVID-19 may also have cardiac autonomic dysfunction (CAD), as well as reduced functional capacity (FC) in the recovery period of disease. However, it is unclear whether individuals infected with COVID-19 have impaired CAD, as well as a greater reduction in FC compared to individuals with SAH not infected to COVID-19.
Objectives: We assessed if cardiac autonomic function and FC differ in SAH patients with post-COVID-19 compared to SAH individuals without COVID-19 infection.
Methods: Methods: We evaluated 40 individuals (31 to 80 years old, both sexes) diagnosed with SAH who had or did not have COVID-19. Volunteers were divided into 2 groups: Group 1 (G1), individuals with SAH and COVID-19 and Group 2 (G2), individuals with SAH. Cardiac autonomic function was assessed with heart rate variability (HRV) method. R-R intervals from ECG were recorded at rest in the supine position for 10 minutes. Stable sequences of 256 R-R intervals were chosen and was analyzed using symbolic analysis (SA) as follows: 0V% (patterns with no variation - sympathetic modulation), 1V% (patterns with one variation, - sympathetic and parasympathetic modulation), 2LV% (patterns with two like variations - parasympathetic modulation) and 2UV% (patterns with two unlike variations - parasympathetic modulation) indices. The FC assessment was performed by 6-minute walk test (6MWT). Student t-test or Mann-Whitney test was performed to compare groups. Furthermore, the correlation between SA indices and the 6MWT was tested by Pearson or Spearman correlation test).
Results: The G1 was composed of 21 individuals (53$\pm$13 years; 57% female) and G2 was composed of 19 individuals (53$\pm$11 years; 32% female). The groups were similar in terms of age, anthropometric data, clinical status and medication. The SA did not show significant differences between groups. Regarding the distance covered in meters in 6MWT, G2 showed higher values when compared to G1 (G1: 464.70$\pm$59.41 vs. G2: 522.21 $\pm$77.6, $p<0.05$). There was a positive and moderate correlation between the 6MWT and the 2LV% index only in G2 ($r=0.58$; $p<0.05$). The other variables did not show any significant correlations for both groups.
Conclusion: Individuals with SAH who had COVID-19 walked a shorter distance demonstrating that there was a greater impact on the functional capacity of this population. The SAH together with COVID-19 did not show a worsening in cardiac autonomic function when compared to the SAH group without infection to COVID-19.
Implications: The results of our study can contribute to the clinical applicability of several health professionals, with the aim of guiding rehabilitation programs for these individuals and thus improving their physical capacity.
Keywords: COVID-19, Arterial hypertension, Functional capacity

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PLASTICITY OF SKELETAL MUSCLE AFTER PARTIAL INJURY OF THE ACHILLES TENDON IN RATS

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Background: Skeletal muscle is one of the most dynamic tissues in the human body. Among many adaptations, skeletal muscle plasticity may be related to its extensive structural and metabolic remodeling. However, there are some gaps in the literature on the adaptive response of skeletal muscle to tendon injury.
Objectives: To evaluate the effects of partial injury of the Achilles tendon (CT) on remodeling and plasticity of the gastrocnemius muscle (GM) after partial injury of the Achilles tendon using a mouse model.
Methods: The study was performed on Wistar rats that were divided randomly into five experimental groups (Project Ceua Approved

028/15). The group control consists of animals that were not submitted to partial injury of the Achilles tendon (TC) and four other groups that were submitted to partial injury of the TC and subdivided by the time of tissue collection, namely: 3.1428 and 55 days after the injury. the muscle gastrocnemius was collected and used for the analysis of gene expression, zymography, and morphology. The CTwas collected only to prove the presence of the lesion.
Results: The tendon injury generated a decrease in the expression of genes Vegf, Smad3, Egr and Akt 3 days in skeletal muscle. As well as increased gene expression, Col3a1, Ctgf, Timp- 2 and Bgn. All when compared to the control group. In the period of 14 days after partial injury of the Achilles tendon, a decrease in the Mstn and Smad3 gene content was verified. On the other hand, there was an increase in the expression levels of the Akt and Vegf genes. In the period of 28 days after the injury, there was an increase in the levels of expression of the genes Tgf-b, Vegf, Mstn, Pax7 and Myod1. With the decrease of Smad3 expression, Akt. Finally, 55 days after partial Achilles tendon injury, the Akt, P70s6k, Pax7, Mstn and Atrogin-1 genes showed an increase in their expression. While the levels of Smad3, Timp-2 showed a decrease. As for the zymography analysis of MMP-2 activity in the gastrocnemius muscle, it was demonstrated that MMP-2 pro increased in the 28D and 55D groups when compared to the control group. For morphological analyses, only the 55D group showed an increase in cross-sectional area and diameter.
Conclusion: The project is in the phase of discussing the results, but the partial injury of the Achilles tendon in rats probably affected the homeostasis of the skeletal muscle, disturbing signaling/degradation pathways, in addition to impacting the remodeling process through the communication of the muscular extracellular matrix with the tendon.
Implications: The findings of this study have the potential to improve the understanding of the underlying effects of the muscle-tendon relationship and may provide valuable information for the development of targeted therapies aimed at improving the recovery and rehabilitation of muscle and tendon injuries. Furthermore, the results of this study may help to identify new therapeutic targets and biomarkers for the diagnosis and monitoring of muscle and tendon injuries, allowing for a more personalized and effective treatment.
Keywords: Injury, Muscle-tendon interaction, Remodeling

Conflict of interest: The authors declare no conflict of interest.
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SEDENTARY BEHAVIOR AND PHYSICAL ACTIVITY LEVEL OF OLDER ADULTS DURING AND AFTER THE RESTRICTIVE MEASURES OF THE COVID-19 PANDEMIC

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Background: The COVID-19 pandemic has actively impacted the lifestyle of older adults, interrupting their participation in exercise programs (EP) and consequently increasing sedentary behavior (SB) and decreasing physical activity (PA). However, the flexibilization of the pandemic's restrictive measures is expect that the older adults will return to adopting an active lifestyle.
Objectives: To compare the SB and PA level of older adults during and after the restrictive measures of the COVID-19 pandemic.
Methods: This is an observational and longitudinal study. Older adults ($\geq$60 years old), with preserved ambulation and participants in the multicomponent EP (3x50min during the week) before the COVID-19 pandemic were included. The participants were evaluated 18 months (T1= during the restrictive measures of the pandemic) and 24 months (T2= after the restrictive measures of the pandemic) after the interruption of the EP. SB and PA level were evaluated by the ActivPAL3^{TM} micro accelerometer. SB variables were daily SB time, % of SB time during the day, daily sitting time, number of sedentary bouts $>$ 30min and time spent in sedentary bouts $>$ 30min. The PA level was described by the number of steps per day. To evaluate the effect of time in the SB variables and the PA level, a generalized linear mixed model analysis was used. Time was considered a fixed effect and participants a random factor. Results are presented in estimated marginal means and standard error. Statistical analysis was performed using the JAMOVI software (version 2.3.18) and a significance level of $p < 0.05$ was adopted.
Results: Seventeen older adults were included (75.8 $\pm$ 7.47 years, 76.5% female). No statistically significant differences were observed in the time spent in SB (T1= 8.49 h and T2= 8.85 h, X^2= 1.99, Dif= 0.356, p= 0.158), % of time in SB (T1= 55.9 % and T2= 56.3%, X^2= 0.06, Dif= 0.382, p= 0.793), sitting time (T1= 8.06 h and T2= 7.87 h, X^2= 0.324, Dif= -0.191, p = 0.569), number of sedentary bouts $>$ 30min (T1= 3.85 and T2= 4.14, X^2= 0.941, Dif= 0.293, p= 0.332), time spent in sedentary bouts $>$ 30min (T1= 4.23 h and T2= 3.90 h, X^2= 0.998, Dif= -0.332, p= 0.318) and in the PA level (T1= 9521 steps and T2= 9862 steps, X^2= 0.653, Dif= 341, p= 0.419) of older adults after the flexibilization of the restrictive measures of the COVID-19 pandemic.
Conclusion: No significant changes were observed in the SB and PA level of older adults who participated in an EP after the flexibilization of restrictive measures of the COVID-19 pandemic.
Implications: The findings of this study demonstrate that despite the flexibilization of restrictive measures of the COVID-19 pandemic, the older adults continue to have high rates of SB, demonstrating the need to implement public policies that reduce SB and encourage the practice of PA.
Keywords: Aged, Sedentary Behavior, COVID-19

Conflict of interest: The authors declare no conflict of interest.
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RELATIONSHIP BETWEEN SEDENTARY BEHAVIOR, PHYSICAL ACTIVITY LEVEL AND PHYSICAL FUNCTION OF OLDER ADULTS DURING THE COVID-19 PANDEMIC: CROSS-SECTIONAL STUDY

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Background: Studies already showed that the practice of physical activity (PA) is an important factor in the physical function (PF) of older adults, as well as the sedentary behavior (SB) can be negatively influence. The COVID-19 pandemic and the need for restrictive measures, the older adults had to interrupt their participation in exercise programs (EP) and consequently adopted a more restricted lifestyle.
Objectives: To evaluate the relationship between SB, PA level and PF of older adults during the COVID-19 pandemic.
Methods: This is a cross-sectional study. Older adults (≥60 years), with preserved ambulation and participants in a multicomponent EP (3x50min during the week) were included. Participants were evaluated 18 months after PE interruption due to the COVID-19 pandemic. The ActivPAL3^{TM} micro accelerometer was used to assess the time spent in SB and the PA level. The PF comprised handgrip strength, assessed by the Lafayette® hydraulic dynamometer (model J00105); lower limb strength, assessed by the 30-second sit-to-stand test (30STS); and functional mobility, assessed by the Timed Up and Go (TUG) test. Data normality was assessed using the Shapiro-Wilk test. The relationship between SB, PA level and PF data were analyzed using Pearson's correlation test. The Simple Linear Regression model was used for to verify the effect of time spent in SB and PA level in the PF variables that showed statistically significant correlations. Statistical analysis was performed using the IBM® SPSS Software (version 26.0) and a significance level of $p<0.05$ was adopted.
Results: Forty-two older adults were included (73.86 ± 6.78 years, 88.10% female), with 477.03 ± 122.77 minutes per day spent in SB and the total of 7593.95 ± 3257.23 steps per day. The handgrip strength was 24.50 ± 6.41 kgf, they presented the total of 11.31 ± 2.67 repetitions in the 30STS and performed the TUG in 10.02 ± 2.27 seconds. Correlations were found between PA level and lower limb strength (r= 0.38, $p<0.05$), handgrip strength (r= 0.40, $p<0.01$) and functional mobility (r= -0.42, $p<0.01$). In the simple linear regression analysis, it was observed that the PA level was able to explain 15.6% of the handgrip strength (R2= 0.156, F= 7.41, p= 0.010), 14.2% of the performance in the 30STS (R2= 0.142, F= 6.60, p= 0.014) and 17.9% of the performance in the TUG test (R2= 0.179, F= 8.72, p= 0.005).
Conclusion: The PA level was related to the PF of older adults after the interruption of PE during the COVID-19 pandemic. In addition, the findings suggest that the PA level may be an important predictor of PF in older adults.
Implications: The findings of this study highlight the need to implement public policies that increase the practice of PA in older adults, especially in critical situations, such as the COVID-19 pandemic.
Keywords: Aged, Physical Function, COVID-19

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: This study was funded by FAPESP (2020/05471-5), CAPES (001) and CNPq (304479/2021-7).
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NORMATIVE DATA FOR THE SINGLE LEG HAMSTRING BRIDGE TEST IN MALE FOOTBALL PLAYERS

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Background: Hamstring muscle (HM) injuries are one of the most common injuries in soccer, accounting for up to 13% of all injuries in this sport. The single leg hamstring bridge (SLHB) test has been one of the clinical tests used to assess hamstring muscle function in athletes. It has been used as a marker of progress in rehabilitation and as a criterion for returning to sport. Therefore, the SLHB is presented as a measure with an important role in the prevention and treatment of IQS injuries. The SLHB is a test proposed by Freckleton et al. (2013) for clinical evaluation of the functional capacity of the HM in a practical way, with low cost and better applicability compared to isokinetic dynamometry. The test requires only one evaluator and a 60 cm high box and can be performed in different environments within the sporting context. It also proved to be a reliable test (intra-examiner intraclass correlation coefficient (ICC) = 0.77-0.89, inter-examiner ICC = 0.89-0.91). Its main outcome measure is given by the number of valid repetitions performed by the athlete until fatigue. Australian football players who performed worse on the preseason SLHB had a higher risk of injury to the HM during the season, with uninjured athletes achieving scores ≥ 26 repetitions on the test.
Objectives: The main objective of this study was to establish normative data for the SLHB and to investigate the association of the results of this test with the history of hamstring injuries in professional male soccer players.
Methods: This is a cross-sectional observational study. In this study, professional male soccer players from Cruzeiro Esporte Clube (CEC) aged between 15 and 40 years were submitted to the SLHB. Mean comparison tests (T-test or Mann-Whitney) will be performed to compare the SLHB result between groups with and without a history of IQS injury.
Preliminary Results: The athletes of the under-17 category of the CEC with an average age of 15.29±0.46, average mass of 67.6±6.05 and average height of 177.73±7.12 made an average of 14 .75±3.46 repetitions in the right lower limb and 14.89±3.6 in the left in the SLHB test. No athlete had a history of HM injury in the previous season.
Conclusion: Based on the preliminary results, it is concluded that under-17 men's soccer players have an average of repetitions in the SLHB lower than the non-injured Australian soccer players.
Implications: Athletes will benefit from access to qualified data on hamstring muscle function. This may enable the planning of more specific preventive programs based on normative data from the SLHB test for the soccer population.
Keywords: Hamstring function, Soccer, Normative Data

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THE INFLUENCE OF AFFORDANCES FROM HOME ENVIRONMENT ON THE PERFORMANCE OF INFANTS FROM THREE TO 10 MONTHS OLD: A LONGITUDINAL STUDY

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Background: Motor development is a dynamic and continuous process in which motor skills present a gain and progression. It is influenced by the experiences to which the infant is exposed, such as the home environment. The infants' residence has gained prominence, as it is the first environment experienced, and when rich in affordances, it establishes a positive connection with motor development. Motor skills such as head control, reaching, grasping, and manipulating objects provide greater functionality and exploration so that the infant can develop.
Objectives: To verify the influence of the available affordances in the home environment in the performance domain of typical infants' motor development.
Methods: This is a longitudinal study with two infants (one boy) born at term, evaluated in their homes from three to 10 months of age. The affordances availability was measured by Affordances in the Home Environment for Motor Development - Baby Scale (AHEMD-IS) questionnaire. It covers dimensions of the home environment such as physical space, variety of stimulation, and gross motor and fine motor toys, classifying them as less than adequate, moderately adequate, adequate, and excellent. The evaluation of the dependent variable, motor performance, was performed using the Infant Motor Profile (IMP). The analyzes were carried out in a descriptive, exploratory, and blind manner by two evaluators. The items analyzed in the performance domains were head control and manual reach, in the supine (items 1 and 14), prone (items 22 and 27), sitting (items 34 and 40), and sitting on the guardians' lap (item 66) postures.
Results: Regarding the home environment affordances, infants maintained excellent and adequate classification in the gross motor skills and variety of stimulation domains during all months. The home physical space remained excellent for 50% of the infants, and for the other 50%, it changed from less than adequate to adequate in the 8th month. At this month, the infant achieved better scores in the motor performance domain. As the scores in the AHEMD-IS domains improved, the infants improved their motor skills. It was observed that adequate availability of fine motor toys at four months old allowed a score of 5 (item 66) in the IMP. While at five months old with excellent availability, a score of 6 (item 66) was obtained in the posture sitting on the caregiver's lap and supine position.
Conclusions: The present study presented the influence of the home environment affordances on motor performance at IMP. As the physical space of the residence and fine motor toy dimensions scores increased, there was an increase in the reaching, grasping, and manipulating objects scores and, consequently, in the total score of the performance domain.
Implications: The knowledge about how the influence of home environment affordances on the motor performance and motor skills of infants can be essential to guide clinical practice. In addition, this knowledge will allow health professionals to coach parents on how to stimulate motor development at home in a more assertive and individualized way.
Keywords: Infant development, Motor skills, Infant Motor Profile

Conflict of interest: The authors declare no conflict of interest.

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CORRELATION BETWEEN PRIMARY DYSMENORRHEA AND MOOD DISORDERS IN NULLIPAROUS YOUNG WOMEN

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Background: Primary dysmenorrhea (PD) is characterized by menstruation with painful periods in women without pelvic organ damage. It constitutes a gynecological dysfunction that manifests itself with pain in the lower abdomen, which may radiate to the paravertebral region and thighs. PD pain can impair activities of daily living (ADLs) and affect women's behavior, even causing anxiety and depression.
Objectives: To assess PD and mood disorders (anxiety and depression) in young nulliparous women and identify their associations.
Methods: A descriptive, observational, cross-sectional study was carried out with a convenience sample of young nulliparous women. Women aged between 18 and 30 years, who had never been pregnant and were not taking medication to treat mood disorders, were selected. The participants were evaluated by the same examiner using the socio-clinical questionnaire, visual analogue pain scale (VAS) and hospital anxiety and depression scale (HADS). In the data analysis, the averages and standard deviation of the variables were calculated, according to the distribution of the sample's normality, and the groups with and without PD were compared using the t test for independent samples, and the correlation analysis between PD, anxiety and depression by Pearson's correlation coefficient (R). Data were analyzed using the Statistical Program for Social Sciences (version 23) considering a significance level of 5%.
Results: The sample consisted of 69 nulliparous young adult women with a mean age of 21.86 $\pm$ 3.16 years. The prevalence of PD was 65.21% (n=45) and from this group, 35 participants reported that PD affected their performance in ADLs. The level of dysmenorrhea pain was low, with an average VAS of 3.59 $\pm$ 3.16 points. Most participants mentioned a regular menstrual flow and average pain of 3.59 $\pm$ 3.16 by VAS. In the characterization of behavioral aspects, a prevalence of 59.42% (n=41) was identified in screening for anxiety and 23.18% (n=16) for depression. There was no statistically significant difference between the groups with and without PD regarding mood disorders, although the group with PD had higher values for such disorders. There was a weak direct correlation between anxiety and PD (R=0.30) and a moderate direct correlation between depression and PD (R=0.33).
Conclusion: PD and mood disorders are prevalent among young nulliparous women. Women with PD do not have more mood disorders compared to women without PD, however women who have PD, anxiety and/or depression tend to have higher levels of mood disorders concomitantly.
Implications: In scientific terms, women who have PD concomitantly with anxiety and/or depression tend to have higher levels of PD and mood disorders, which may negatively impact their lives. In clinical terms, this study demonstrates the importance of the professional's appreciation of the assessment of dysmenorrhea and mood disorders that can influence clinical therapeutic practice.
Keywords: Women's health, Dysmenorrhea, Mood disorders

Conflict of interest: The authors declare no conflict of interest.

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RECRUITMENT AND PARTICIPANT FOLLOW-UP STRATEGIES: DATA FROM A RANDOMIZED CONTROLLED TRIAL CONDUCTED VIA REDCAP

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Background: Conducting randomized controlled trials (RCTs) using digital technologies is potentially an accessible, low cost and strategic approach to investigate interventions to improve the beliefs of consumers with regard to low back pain (LBP). However, there are challenges with this research approach, considering that Brazil is a large populous country, and restricted funding scenarios present difficulties for recruitment and follow-up in digital RCTs.
Objectives: To describe the recruitment process and recruitment rates, as well as follow-up rates during an RCT using digital recruitment and follow-up strategies.
Methods: This observational study is secondary to the RCT registered in The Brazilian Registry of Clinical Trials (RBR-10kpgx78). We invited Brazilian residents to tell us what they think about LBP and recorded their responses in Research Electronic Data Capture (REDCap). Until March 15th, 2023, we used three digital recruitment strategies: 1) posts on social networks; 2) paid traffic; 3) WhatsApp® messages. We collected outcomes at immediate and eight-week follow-up after exposure to health education materials. The immediate follow-up must be answered soon after the exposure, otherwise, we send return reminders by: 1) e-mail integrated into REDCap; 2) WhatsApp®; 3) social networks; 4) e-mail of the responsible researcher; daily for the immediate follow-up and every three days for the eight-week follow-up. In this study, we describe the strategies and recruitment rate (randomized people in relation to those who started the survey); response rates (proportion of those who responded to the follow-up in relation to those randomized eligible for that stage).
Results: Recruitment started on December 16th, 2022, and we considered data from 170 adult participants. We posted 32 publications on social media profiles. We invested R$142,35 in two 7-day paid traffic campaigns, reaching 26,203 accounts, click-through rate of 2.19% and conversion rate of 2.78%. We sent WhatsApp® messages in bulk on two specific days: 1) 19/12/22, with 60 new recruits in one week; 2) 31/01/23, with 65 new recruits at the same time. In three months, we have 205 respondents to the invitation and 170 randomized, indicating a recruitment rate of 82.9%. The response rates for the immediate and eight-week follow-up are 81.2% and 28.3%, respectively, and the median response times are 6.1 and 64.9 days, in that order. Immediate follow-up was completed right away by 39.9% of the participants and the return via WhatsApp® reminders represented 46.4%. At the eight-week follow-up, e-mails integrated into REDCap accounted for 57.7% of survey returns.
Conclusions: The rates show the viability of combined recruitment strategies on social networks and WhatsApp®. The retention of respondents during the RCT can be maintained through WhatsApp® messages and e-mails integrated into REDCap.
Implications: Designing an electronically conducted RCT needs a diversified strategic plan for recruiting and retaining participants, as well as iterative monitoring of the results, in order to optimize recruitment and follow-up rates.
Keywords: Research Subject Recruitment, Follow-Up Studies, Randomized Controlled Trial

Conflict of interest: The authors declare no conflict of interest.
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PSYCHOMETRIC PROPERTIES OF THE YC-PEM BRAZIL

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Background: Participation is a critical concept for children's health and their interaction with the context in which they live. Recently, participation has been understood as a family of constructs that includes attendance (frequency of activities carried out) and involvement (engagement, persistence, social connection, affection, and personal preferences). Young children with disabilities are at risk of experiencing participation restriction, which reinforces the importance of incorporating participation assessment measures into child rehabilitation. In this sense, the Participation and Environment Measure - Young Children (YC-PEM) stands out, an instrument developed based on the model of the International Classification of Functioning, Disability and Health (ICF), centered on the perception of the caregiver, to assess the participation and environment of young children, with or without disabilities.
Objective: To establish the initial psychometric properties of the YC-PEM translated into Brazilian Portuguese.
Methods: This is a methodological study. A total of 143 Brazilian children with and without disabilities from ages 0 to 5 years and 11 months were included. Recruitment was voluntary, resulting from dissemination on social networks and partnerships with universities and teaching clinics in Brazil. The parents/guardians responded to the instrument YC-PEM. The variables analyzed were frequency of participation, involvement, and desire for change; supports, barriers, environmental helpfulness, environmental resources and overall environmental support, in the three sections: home, daycare/preschool and community, adopting a significance level of α=0.05. The Cronbach's alpha test was used to assess internal consistency (IC). To check the construct validity, we investigated differences between groups using Mann-Whitney or Chi-square tests.
Results: 73 children with (mean age 24.6 months) and 70 children without disabilities (mean age 30.9 months) of both genders participated, among which 41% attended daycare/preschool. Cronbach's alpha ranged from 0.625 to 0.991 in the different subscales, which confirms its internal consistency. As for construct validity, the instrument could detect statistically significant differences between the groups in the domains of frequency of participation and involvement in daycare/preschool, involvement in the community, help from the environment, resources and General support from the environment in all 3 instrument sections.

Conclusion: The YC-PEM Brazil has acceptable initial psychometric properties and is a valid option to evaluate the participation of young Brazilian children, with or without disabilities, in clinical practice and research.
Implications: The instrument can help health professionals to identify the levels of participation of children aged 0 to 5 years and plan interventions aspired at improving participation in different contexts. In addition, caregivers, who are active agents in the child's support process, can learn about participation and develop skills that promote greater management of their children's levels of functionality and autonomy.
Keywords: Child Health, Social Participation, Data Reliability

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Ethics Committee of the Faculty of Health Sciences of the Federal University of Rio Grande do Norte – FACISA/UFRN, under registration CAEE: 79628017.0.0000.5568.

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PEAK EXPIRATORY FLOW AS A PREDICTOR OF DYNAPENIA IN COMMUNITY-DWELLING OLDER ADULTS: A CROSS-SECTIONAL STUDY

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Background: Aging brings damage to the musculoskeletal system, which may result in a decline in neuromuscular strength, a condition called dynapenia. Additionally, there may be impairment of strength and/or respiratory function, which promotes negative outcomes and can potentiate or accelerate the onset of dynapenia in older adults. Previous studies have shown the association of respiratory variables with sarcopenia, as well as suggesting cut-off points as diagnostic criteria for this condition. However, the identification of the association between peak expiratory flow (PEF) obtained by means of the *peak flow meter* with dynapenia, as well as the proposition of cut-off points to predict it in brazilian older adults, have not yet been found in the available literature.
Objectives: To compare the values of PEF between dynapenic and non-dynapenic older adults, to assess the association of PEF with the diagnosis of dynapenia, and to establish cutoff points for PEF to predict dynapenia.
Methods: Cross-sectional study conducted with 382 (70,03±7,30 years) community-dwelling older adults from the urban area of Macapá, Amapá. Peak expiratory flow (PEF) obtained using a *Peak Flow Meter* and dynapenia based on handgrip strength were evaluated, considering three diagnostic criteria: 1(<26 kg for men and <16 kg for women), 2(<30 kg for men and <20 kg for women), and 3(based on the sample's BMI and sex). The Student's t-test was used for group comparisons, and crude and adjusted analyses using a binary logistic regression model were performed to verify the association between PEF and dynapenia ($p<0,05$). Receiver Operating Characteristic (ROC) curves with parameters of area under the ROC curve (AUC), sensitivity, and specificity, with a 95% confidence interval and a significance level of 5%, were generated to identify potential PEF cut-off points as discriminators of dynapenia.
Results: Lower PEF values were observed in those with dynapenia when compared to those with non-dynapenia ($p<0,001$); and in the adjusted analysis, there was an inverse association between PEF and dynapenia, independent of the cutoff point considered ($p<0,05$). Cutoff points were established for PEF as a discriminator of dynapenia, namely: 1 (PEF≤260L/min; AUC=0.631; sensitivity=70.42%; specificity=49.20%), 2 (PEF≤280L/min; AUC=0.624; sensitivity=71.94%; specificity=45.27%) and 3 (PEF≤250L/min; AUC=0.640; sensitivity=70.37%; specificity=52.82%).
Conclusion: The elderly with dynapenia had lower PEF values compared to the elderly without dynapenia. In addition, PEF cut-off points have been proposed to predict dynapenia, results which demonstrate that PEF seems to influence the dynapenia process.
Implications: The identification of the association and the diagnostic criteria for dynapenia based on PEF, using the *peak flow meter*, a portable device widely used by physical therapists, can help to screen for this condition and based on this, propose measures for prevention and care of the elderly respiratory health.
Keywords: Aged, Muscle strength, Peak Expiratory Flow Rate

Conflict of interest: The authors declare that there are no conflicts of interest.
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Ethics committee approval: Federal University of Amapá, opinion number 1.738.671.

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VENTILATORY VARIABILITY IN HEART FAILURE, CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND HEART FAILURE PLUS CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Background: Ventilatory variability (vVE) constitutes the dynamic and complex breath-to-breath oscillation of pulmonary ventilation. However, vVE has only recently been investigated in heart failure and chronic obstructive pulmonary disease (COPD) using the Poincaré approach. Briefly, the Poincaré analysis generates, through scatter plots, two pieces of information: called SD1 (standard deviation 1) and SD2 (standard deviation 2); SD1 is defined as the dispersion of data points perpendicular to the line of identity across the plot's centroid and is a short-term variability descriptor; SD2 describes the dispersion of points along the line of identity and reflects the long-term variability of the signal.
Objectives: the present study aims to perform Poincaré analysis to distinguish vVE patterns between healthy controls and patients diagnosed with COPD, heart failure (HF) and heart failure with COPD during cardiopulmonary exercise testing (CPET).
Methods: Patients with COPD, heart failure, COPD + HF and healthy subjects participated in this research. Lung function was performed according to the recommendations of the American Thoracic Society/European Respiratory Society and adjusted to the Brazilian reference values. Standard echocardiography followed the recommendations of the American Echocardiography Society. A symptom-limited incremental CPET was performed on a cycle ergometer, with increments per minute of 5–10 W for patients and 10–15 W for healthy controls. Poincaré´ analysis was used to calculate vVE using a custom R program (http://www.R-project.org),

with breath-by-breath aliquots to obtain SD1 and SD2 values, normalized by the number of points in VE. All procedures were approved by the Local Ethics Committee (51596221.4.0000.5076).
Results: Demographic and anthropometric data including age, height, weight and BMI were not significantly different between groups ($P > 0.05$). SD1 and SD1/SD2 for VE were significantly different for heart failure and heart failure-COPD compared to COPD and controls ($P > 0.05$). SD2 did not differ between groups ($P>0.05$). Surprisingly, COPD and controls shared very similar mean values for SD1, SD2, and SD1/SD2, and HF-COPD showed similar vVE to heart failure alone ($P>0.05$).
Conclusion: Our results demonstrated increased vVE in chronic heart failure applying the Poincaré approach.
Implications: Despite the small number of patients, our preliminary results support the measurement of vVE by the Poincaré´ method as a promising tool in clinical physiology.
Keywords: Ventilation variability, COPD, Cardiac insufficiency, Heart failure

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: Not applicable.
Ethics committee approval: Evangelical University of the State of Goiás - 51596221.4.0000.5076.

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ACUTE HEMODYNAMIC RESPONSES DURING RESISTANCE TRAINING WITH BLOOD FLOW RESTRICTION: A SYSTEMATIC REVIEW AND META-ANALYSIS OF CROSS-STUDIES

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Background: Studies using resistance training with partial restriction of blood flow (BRF) have shown significant gains in muscle performance, such as gains in strength and hypertrophy, however, few studies have evaluated the hemodynamic effects after using the technique.
Objectives: It consists of analyzing whether the BFR significantly alters the hemodynamic variables (HR, SBP, DBP) in comparison with the passive control (PC) and active control (conventional resistance training - CRT) groups.
Methods: The present study is a systematic review with meta-analysis registered in PROSPERO (No. CRD42021234757) and follows the Cochrane standard recommendations and the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines.
Results: A total of 15 randomized crossover studies with 466 participants were eligible for analyses. Our data demonstrated that BFR significantly increased HR compared to the PC condition (mean difference [MD] = 7.25, 95% CI: 2.15−12.35 bpm, $I^2 = 12\%$), considering all data pooled (6 studies, 7 comparisons, n = 192 subjects); however, BFR showed no significant differences from the CRT condition) (MD = −4.75, 95% CI: −12.70 at 3.20 bpm, $I^2 = 83\%$) (10 studies, n = 276 subjects). Considering all data pooled (5 studies, 7 comparisons, n = 186 subjects), BFR significantly increased SBP (MD = 11.67, 95% CI: 6.17−17.17 mmHg, $I^2 = 0\%$) compared to the condition of PC. In contrast, there was no difference when compared to the CRT condition (MD = 2.17, 95% CI: −5.62 to 9.96 mmHg, $I^2 = 77\%$) (10 studies, n = 264 subjects). Similar to SBP, BRF significantly increased DBP (MD = 6.93, 95% CI: 1.24−12.61 mmHg, $I^2 = 41\%$) (5 studies, 7 comparisons, n = 186 subjects) compared to PC condition while there was no difference when compared to the CRT condition (MD = 1.41, 95% CI: −6.49 to 9.31 mmHg, $I^2 = 89\%$) (11 studies, n = 306 subjects).
Conclusion: Our data demonstrated that, despite causing remarkable hemodynamic responses compared to no exercise, BFR modulates all hemodynamic parameters HR, SBP and DBP, similarly to CRT.
Implications: The present research provides evidence supporting the use of BFR associated with RT in healthy subjects.
Keywords: Hemodynamics, Resistance training, Blood flow restriction

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Ethics committee approval: Not applicable.

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EFFECTIVENESS OF GAMIFIED EXERCISE PROGRAMS ON THE LEVEL OF PHYSICAL ACTIVITY IN ADULTS WITH CHRONIC DISEASES: A SCOPING REVIEW

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Background: Non-communicable chronic diseases are characterized by their slow progression and long duration. They usually require ongoing management. The practice of regular physical exercises is recommended due to the already proven benefits; however, it still has low adherence by patients. In view of this, we currently observe the increasing use of technologies with the aim of reducing sedentary behavior to improve disease management, as well as prevent them in this population.
Objectives: To map and understand the state of the art in the use of gamified exercise programs in the level of physical activity, sedentary behavior, and quality of life in patients with chronic non-communicable diseases. In addition, to investigate whether there is a difference in the benefits of programs with or without professional exercise supervision.
Methods: In this scope review, searches were performed in the following databases: PubMed, EMBASE, PEDro, LILACS and Cochrane Library. Randomized clinical trials with adults or elderly people with chronic diseases undergoing gamified exercise programs that investigated the effect of gamified exercise programs compared to usual exercise on physical activity level, sedentary behavior and quality of life were included. The methodological quality (via PEDro, 0 to 10pts), the description of the intervention (via TIDier, 0 to 20pts) and the quality of health applications (via MARS, 0 to 20pts) of the included studies were evaluated.
Results: Nine studies were included (n=901; 61±5 years) including three studies in individuals with cancer, one with stroke, one with multiple sclerosis, one with COPD, two with Diabetes Mellitus, and one with knee and hip osteoarthritis. In three studies, gamification was performed via a smartphone application. The intervention was supervised in six of the nine studies. The scores of the studies in PEDro and TIDieR were 5.5±1.3 (ranging from 0 to 8 pts) and 16.11±3.14 (ranging from 10 to 20 pts), respectively. MARS (ranging from 10,9 to 16,9 pts) was applied in three studies and the score was 13.4±9.75. Supervised gamified interventions increased the level of physical activity (movement time, daily steps and distance walked in 6 minutes) compared to usual supervised exercises.

Quality of life was similar between groups in all studies. Unsupervised interventions were similar for all outcomes evaluated.
Conclusion: Supervised gamified exercise programs seem to increase the level of physical activity compared to usual exercises in patients with chronic diseases. However, studies with better methodological qualities and subgroup analyzes are needed.
Implications: Gamified physical exercise programs can be a good strategy to increase physical activity levels if they are supervised compared to habitual exercise programs. However, other strategies need to be implemented so that this improvement in the level of physical activity has a positive impact on the quality of life of patients with chronic non-communicable diseases.
Keywords: Gamification, Sedentary behavior, Physical activity

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Ethics committee approval: Not applicable.

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ACUTE INFLUENCE OF MODIFIED LASER IRRADIATION OF BLOOD (ILIB) ON ANAEROBIC POWER AND SYMPATOVAGAL BALANCE IN ACTIVE ADULTS

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Background: Intravascular Laser Irradiation of Blood (ILIB) is a low-level laser technique, that has systemic effects, including activation of the antioxidant system, inhibition of the systemic inflammatory process, increased blood fluidity and hemorrheological property on the red cells. However, the use of ILIB as an ergogenic resource in sports is little studied.
Objectives: To investigate the acute influence of ILIB on muscle power and heart rate variability (HRV), in physically active individuals submitted to a submaximal effort test.
Methods: The study is a randomized controlled crossover clinical trial. Nine male participants, university students, with a mean age of 24 ± 4.52 years and practitioners of regular physical activity were evaluated. The volunteers participated in the two intervention groups (ILIB and placebo) at different times. First, an evaluation session was carried out, being identified HRV indicators and blood lactate level at rest and in response to the stress test. After seven days, the participants received a session of the experimental protocol, which was drawn. After finishing these sessions, a reassessment was performed, getting data on HRV indicators and blood lactate level at rest and in response to the exercise test. After seven days, the entire data collect was repeated, however, the participants performed the remaining experimental protocol. The results were analyzed using Two-Way ANOVA with repeated measures, complemented with the Bonferroni test. All conclusions were obtained at the 5% significance level.
Results: For the physical performance variables, the Fatigue Index showed a significant difference ($p<0.05$) from the Post-Placebo moment (54.5±13.9) in relation to the Post-ILIB (45.1±9.9). Blood lactate showed a significant difference between moments (initial, post-test and after 15 min) within all groups. For HRV, in the time domain, the indices showed a significant difference ($p<0.05$) when comparing the moments within the interventions in relation to the initial moment. Furthermore, the RMSSD values were different between Pre-ILIB (3.54±0.44) against Post-ILIB (4.22±0.27); after the Wingate test, the Pre-Placebo (1.00±0.31) differed from the Post-Placebo (1.77±0.74). In the frequency domain, HF and LF/HF showed a significant difference ($p<0.05$) from Post-ILIB to Pre-ILIB after 15 min.
Conclusion: The study showed a possible relationship between the acute influence of the use of ILIB on parasympathetic activity. It did not show improvement in performance in an anaerobic test, but suggested a possible improvement in the ability to withstand high-intensity stimuli. The lack of ILIB studies in sports science, as well as the study's findings, suggest that more research should be done, using different protocols with different stimuli.
Implications: The ILIB can be useful for coaches and health professionals working with athletes, helping to optimize physical recovery, making it a resource for post-training recovery.
Keywords: Photobiomodulation, Physical performance, Heart rate variability

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Acknowledgment: Not applicable.
Ethics committee approval: Federal University of Mato Grosso do Sul (CAAE 58421422.1.0000.0021 / Parecer 5.735.222).

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PROFILE OF WORKERS WHO USE COMPUTER TERMINALS

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Background: Nowadays, the computer allied to the use of the internet is already fundamental in the work routine. Understanding the individual, in a broad and integral way, is an ongoing need to establish strategies for the prevention and cure of occupational diseases.
Objectives: To trace the sociodemographic profile of workers who use computer terminals in the cosmetics industry.
Methods: The present research was approved by the Ethics Committee of the Faculty of Medicine of the University of Coimbra through the letter 094 CE - 2018. This is a cross- sectional study, carried out with 55 workers of both genders, older than eighteen years of age, who made use of computers in their work activities in a Cosmetics Industry located in the mid-western region of Brazil, had a workload greater than four hours a day, and agreed to participate in the research by signing the informed consent form (ICF). We excluded workers who terminated their work contract and were on vacation during the research and those who, despite having signed the ICF, decided to discontinue participation. The Sociodemographic Questionnaire was applied, which consisted of a standardized instrument created for this study.
Results: It was observed that, on average, the workers' age was 29 years old, with a body mass index (BMI) of 24. Most were male (52.7%), married (58.2%), without children (61.8%), had completed college (52.7%), worked 9 hours a day (65.5%), in good ergonomic conditions (67.3%), sat for 2 to 6 hours (54.5%), took breaks (72.7%), and had no systemic arterial hypertension (SAH) (94.5%), was not a

smoker (96.4%), nor an alcoholic (65.5%), reported stressful factors in the work environment (52.7%), used medication (65.5%), without diagnosed diseases (70.9%), could not identify the time (41.8%) and the day of the week (20%) when the pain/body discomfort appeared, without edema in the legs (89%). It was found that 38.2% of the workers slept 7 hours a night, 50.9% practiced physical activity, 81.8% had leisure activities, 96.4% had time with the family, 87.3% had domestic activities.
Conclusion: Most workers were young adults, married, without children, with a complete college education, working 9 hours a day with breaks, and 2 to 6 hours of these spent sitting, in good ergonomic conditions, but there was a stressful factor at work. They presented a normal BMI and no SAH, most of them used medication, however without diagnosed diseases, with complaints of pain/body discomfort. Most had the following lifestyle habits: they practiced physical activity, had leisure activities, had time for the family, performed domestic activities, were neither smokers nor drinkers, but slept less than 7 hours a night.
Implications: With the increase in the number of workers and the computerization of workstations, it is necessary to give visibility to the working, living, and health conditions of computer terminal users in order to direct strategies that contribute to a healthy work environment.
Keywords: Health profile, Computers, Worker health

Conflict of interest: The authors declare no conflict of interest.
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Ethics committee approval: Ethics Committee of the Faculty of Medicine of the University of Coimbra by letter 094 CE - 2018.

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PHYSIOTHERAPY INTERVENTIONS FOR DIABETIC FOOT

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Background: Diabetes mellitus (DM) is a metabolic disorder that affects the production or action of insulin. Complications (e.g., diabetic foot, characterized by infection, ulcer, and/or soft tissue destruction) may occur in different ways and severities. In more severe cases, individuals may present neurological disorders and peripheral artery disease in the lower limbs. In this sense, physiotherapy becomes important for prevention and treatment, given the number of individuals who do not reach adequate healing.
Objective: To perform a literature search to identify the main physiotherapy interventions for the diabetic foot.
Methods: This narrative study was conducted in November 2022 in PubMed, Scientific Electronic Library Online (SciELO), Physiotherapy Evidence Database (PEDro), and Cochrane Library databases using the Boolean operator AND and the following descriptors: diabetic foot, physiotherapy, and treatment. We included full-text articles published in Portuguese and English that conducted randomized clinical trials or systematic reviews; the studies should have been published and indexed in the databases mentioned above in the last 14 years. Exclusion criteria comprised theoretical reviews, monographs, dissertations, theses, and studies that included animals or did not have available abstracts. The search resulted in 151 articles (PubMed = 121, Cochrane Library = 27, PeDro = 2, and SciELO = 1); 17 articles were selected after reading titles and abstracts, and 4 were selected after full-text reading.
Results: Several physiotherapy interventions were found, such as lower limb exercises to heal wounds in patients with type 2 DM and physical resources physical resources associated with phototherapy through light-emitting diodes. The safety and efficacy of photobiomodulation at home for treating diabetic foot ulcers and topical ozone therapy were also observed as adjuvant treatments.
Conclusion: We analyzed physiotherapy interventions with different protocols for diabetic foot: guidance, active exercises, isolated movements for lower limbs, and physical resources (e.g., photobiomodulation, laser therapy, and ozone therapy). These interventions also improved the blood supply to lower limbs, which may have prevented wounds, increased the chance and speed of healing, and avoided amputations.
Implications: Physiotherapy interventions are fundamental to prevent and treat complications, improving the quality of life of patients with diabetic foot ulcers and reinserting them in society.
Keywords: Physiotherapy, Diabetic foot, Treatment

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ATYPICAL GUILLAIN-BARRÉ SYNDROME ASSOCIATED WITH COVID-19 IN A CHILD: A CASE REPORT

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Background: The SARS-CoV-2 virus (severe acute respiratory syndrome coronavirus 2) became known worldwide as the cause of the disease COVID-19. COVID-19 can compromise the central nervous system, causing neurological disorders such as Guillain-Barré syndrome (GBS). GBS is triggered by viral and bacterial agents, defined as polyradiculoneuropathy of acute/subacute onset, with sensory manifestations, muscle weakness, temporary quadriparesis and even severe respiratory failure with respiratory and diaphragmatic muscle weakness.
Objective: To report the case of a child diagnosed with COVID-19 and GBS and describe its clinical and functional evolution.
Methods: Case report study, carried out from the collection of data from the medical records of a child admitted to the back-up Pediatric Intensive Care Unit for COVID-19 in a Brazilian hospital.
Results: A previously healthy 12-year-old boy started flu-like symptoms, followed by diarrhea and after 7 days he developed weakness in his hands and walking difficulty. Admitted with positive serology for COVID-19 with SARS-CoV-2 virus detected in the viral panel of CSF and nasal swab, laboratory and imaging tests without alterations. He was oriented, eupneic, had adequate vital signs, isochoric and photoreactive pupils, absence of nystagmus and alterations in facial sensitivity, preserved facial mimicry, tetrasegmental alteration, areflexia in lower limbs, hyporeflexia in upper limbs, absence of signs of pyramidal release, preserved tactile and painful sensitivity, uncharacteristic cerebrospinal fluid. Physical therapy diagnosis: eutonic neuroperipheral functional kinetic deficiency, preserved

autonomic function, moderate reduction in strength, normal sensory functions, affecting limbs. Functional Status Scale classified with mild functional dysfunction. Electromyography was performed resulting in motor neuropathy, primarily axonal, symmetric of severe intensity and with severe associated axonal loss, with signs of active denervation. He received treatment with intravenous immunoglobulin at a standard dose for 4 days and gabapentin to treat neuropathic pain: physiotherapeutic treatment using active-assisted exercises, decubitus change training, respiratory muscle training, strength training, balance and assisted walking with perceptual-cognitive stimulus. He was discharged from the ICU after 6 days, showing improvement in his motor condition, walking with minimal assistance, with changes in gait, motor coordination and dynamic balance. After 18 days, he was discharged from the hospital with a score of 44 for peripheral muscle strength (Medical Research Council), maximum inspiratory pressure of 63 cmH^2O, improved functionality, being able to perform activities of the daily routine, such as walking and climbing stairs independently.
Conclusion: Few cases of GBS associated with COVID-19 in children have been reported in the world literature, leaving many questions about the mechanisms that influence the different factors for the development of the disease. Diagnosis and early intervention in these patients have shown favorable results, providing progressive clinical and functional improvement, but further studies regarding specialized protocols for the rehabilitation of these patients are still needed.
Implications: This case report contributes to the knowledge regarding the characteristics and functional evolution of this syndrome associated with COVID-19 in children, due to the scarcity of publications to date.
Key words: COVID-19, Child, Guillain-Barré syndrome

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