

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

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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

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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 (DTE_x, 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 DTE_x 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 DTE_x 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

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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 $29 (\pm 5.3)$ 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.

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