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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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