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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

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162

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

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