https://doi.org/10.6063/motricidade.31749

Abstract

Effect of physical exercise in sarcopenia in institutionalised elderlies

Inês Oliveira Marinho Gomes[1], Luís Azevedo[1], Catarina Martins[1], Henrique Pinto[1], Sofia Martins[1], Jorge Soares[1,2], Catarina Abrantes[1,2], Graça Pinto[1,2], Maria Paula Mota[1,2]

[1] Department of Sports, Exercise and Health, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal
[2] Research Center in Sports Sciences, Health Sciences and Human Development, CIDESD, Vila Real, Portugal

*E-mail: inesmarinhocb@hotmail.com

Conflict of interest: nothing to declare. **Funding:** This work was supported by SoilRec4+Health - Soil recovery for healthy food and quality of life (NORTE-01-0145-FEDER-000083).

Ageing is an irreversible natural and normal life process that leads to function loss, often associated with sarcopenia and increased dependence on others. Physical exercise induces an improvement in muscle function, counteracting the effects of ageing and potentially delaying dependence. The main objective of this study was to measure the effect of a physical exercise program on physical fitness, sarcopenia, and independence level in elderlies living in nursing homes. Data was collected from 20 elderlies (80% women between 70-97 years, 85.3±6.2). Weight and height were measured to calculate the body mass index (BMI). Handgrip strength

(HG) (Camry EH101) and frailty test (Short Performance Physical Battery- SPPB) were performed. Questionnaires for functional independence (Barthel Index - BI), sarcopenia (SARC-F) and Nutrition (MNA) were applied. Regarding the functional tests, the results demonstrate that the exercise program led to an improvement in the physical fitness of the elderly (SPPB: t= -3.492; *p*=0.002; HGright: t= -4.438; *p*=0.000; HGleft: t= -6.142; *p*=0.000). Despite not having significant differences in the BI and SARC-F, there was a tendency to improve average values (BI: Pre: 76.3±24.8; Post: 77.0±22.6; SARC-F: Pre: 3.6±2.9; Post: 3.4±2.8). Regarding BMI, no significant changes were observed Pre: 28.2±6.8; Post: 28.9±6.7). Despite no significant changes observed in the sarcopenia scale, the physical exercise program induced significant changes in functional capacity and muscle function, which may have contributed to delayed functional independence loss. This study reinforces the necessity to include daily physical exercise routines, as one of the most effective ways to reduce sarcopenia and prevent dependency in the elderly population.

Keywords: elderly, resistance exercise, strength, and sarcopenia