

Abstract

Title: The effect of water-based exercise program on the functional physical fitness in elderly

Objectives: The purpose of this study was to verify the effect of water-based exercise program on functional performance in elderly.

Methods: Seven elderly subjects (two men; mean age 70.5 ± 3.5 years and five women; mean age 68.6 ± 8.6 years) volunteered to participate in the study. The subjects participated in a twelve-week supervised exercise program in shallow water once a week (60 min/session). Selected parameters of body composition (body weight, TPH, % TT, TBW, ICW, ECW, ECM / BCM) were determined by multi-frequency bioimpedance electrode (device B.I.A. 2000). The level of hand grip strength was measured by hand-grip dynamometer. The level of lower extremity muscle strength was measured by the 30-Second Chair Stand Test. In order to measure the flexibility of lower back, the standardized motor test Sit and Reach Test was chosen.

Results: Intervention program did not induce significant changes in the monitored parameters of body composition. The quality of muscle was unchanged, parameter ECM / BCM remains unchanged. Values of water (ICW and ECW) remained without significant changes and show some stability. A surprising finding is that after the intervention the body fat percentage increased by 7.1% and the 3.5%. loss of free fat mass occurs. Group of seniors ($n = 7$) demonstrated as significant improvements in lower extremity muscle strength. The scores from the first measurement improved by 17.3% from 19.1 ± 6.6 (rep) to 22.4 ± 4.7 (rep). The intervention program did not confirmed significant efficiency to improve flexibility in the back-hip-thigh area, nor of the strength of the hand grip.

Keywords: aqua-aerobic, water, aging, physical fitness