



Impact of Resistance-Aerobic Bungy Pump Training on Sarcopenia-Related Parameters in Postmenopausal Women

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Background and Aim. While resistance training is the established non-pharmacological ‘gold standard’ for sarcopenia management, there is a growing need for engaging, multimodal interventions. This study evaluated the efficacy of a 12-week Bungy Pump training (BPT) programme – utilising poles with integrated dynamic resistance – on the skeletal muscle index (SMI), muscle strength, and functional performance in postmenopausal women.

Methods. Fifty women (mean age 69.59 years) were assigned to either an experimental BPT group ($n = 26$; three sessions/week) or a control group maintaining habitual daily activity (DA; $n = 24$). Body composition (specifically SMI) was assessed via bioelectrical impedance analysis (BIA). Muscle strength was quantified using handgrip dynamometry (HG), and functional performance was evaluated through gait speed (GS), the 6-Minute Walk Test (6MWT), and the Chair Stand Test (STS).

Results. The BPT group exhibited statistically significant improvements in functional performance, specifically regarding GS, 6MWT distance, and STS scores. No significant changes were observed in SMI or HG strength. Conversely, the DA group demonstrated a significant regression in GS and a decline in HG strength, with no significant changes in SMI, 6MWT, or STS.

Conclusions. A 12-week BPT intervention induces beneficial adaptations in functional performance and mobility among postmenopausal women, positioning it as an effective modality for preventing functional sarcopenia. The absence of a significant effect on SMI, despite improvements in dynamic performance, suggests that the intervention primarily enhances neuromuscular function and cardiovascular efficiency. Future research should focus on optimising training loads to stimulate muscular hypertrophy in this population.

Keywords: Sarcopenia; Bungy Pump; functional performance; women; physical activity

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