



Effects of Aerobic Exercise on Leg Strength and Cardiorespiratory Endurance in Post-menopausal Women

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Background and objective: Post-menopausal women commonly experience declines in leg muscle strength and cardiorespiratory endurance. Regular aerobic exercise has been recommended as an effective intervention to counteract these changes. This study aimed to investigate the effects of aerobic exercise on leg strength and cardiorespiratory endurance in post-menopausal women.

Methods: This study is randomized controlled trial (RCT), A total of twenty post-menopausal women between 50 and 65 years of age were enrolled in this 8-week intervention. The participants were randomly allocated to either an exercise group or a control group. Those in the exercise group (n = 10) engaged in moderate-intensity aerobic training following the nine-square exercise protocol, performed for 30 minutes daily, five times per week. In contrast, the control group (n = 10) was instructed to continue their habitual physical activity without modification. Leg strength was assessed using the Five Times Sit-to-Stand Test (FTSST), and cardiorespiratory endurance was evaluated using the 2-Minute Step Test (2MST) at baseline and after 8 weeks.

Results: After 8 weeks, compared with the control group, the exercise group demonstrated a significant reduction in FTSST completion time (-1.38 ± 0.57 sec, $p < 0.05$) and a significant increase in 2MST repetitions ($+19.40 \pm 5.07$, $p < 0.05$).

Conclusions: The nine-square exercise is an effective aerobic training protocol to enhance leg muscle strength and cardiorespiratory endurance in post-menopausal women.

Keywords: post-menopausal women, nine-square exercise, leg muscle strength, cardiorespiratory endurance, aerobic exercise

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