

Effectiveness of Lateral Stepping Exercise and Retro Walking on Balance and Fall Risk among The Middle –Older Population

Manova M¹, K C Gayathri², P Senthil³, Mohamed Nainar⁴, L Haribabu⁵

¹Undergraduate student, ²Assistant Professor, ³Dean, Chettinad School of Physiotherapy (CSP), Chettinad Hospital and Research Institute (CHRI), Chettinad Academy of Research and Education (CARE) Kelambakkam, Tamil Nadu, India.

⁴Senior Physiotherapist, ⁵Chief Physiotherapist, Department of PMR, Chettinad Hospital and Research Institute (CHRI), Chettinad Academy of Research and Education (CARE) Kelambakkam, Tamil Nadu, India.

Email Id: gaybhava@gmail.com.

Abstract

Introduction: Human balance control requires integrating sensory, musculoskeletal, and central nervous systems. Various methods assess balance, such as evaluating the ability to perform complex tasks or recover from disturbances. Balance is crucial for elderly individuals as poor balance significantly increases fall risk. Epidemiological studies show that 37%-53% of community-dwelling older adults experience pain, often chronic, which may increase their fall risk.

Methods: This study involved 50 participants with Mini-Mental State Examination scores above 25. Pre-test measures for fall risk and balance were obtained using the Timed Up and Test and Berg Balance Scale. The intervention's efficacy was assessed by comparing pre-and post-test results.

Results: The Berg Balance Scale scores improved from a pre-test mean of 31.26 (medium fall risk) to a post-test mean of 49.34 (low fall risk), with a t-value of 25.19 ($P \leq 0.001$). Similarly, the Timed Up and Go Test scores improved from a pre-test mean of 15.40 (high fall risk) to a post-test mean of 10.78 (normal), with a t-value of 21.82 ($P \leq 0.001$). These significant improvements led to the rejection of the null hypothesis. Results indicated significant improvements in balance and fall risk.

Conclusion: The study concludes that combining lateral stepping and retro walking significantly enhances balance and reduces fall risk, demonstrating the effectiveness of this integrated therapeutic approach.