

Effectiveness of individualized home-based exercise on turning and balance performance among adults older than 50 yrs: a randomized controlled trial

ABSTRACT

Objective: This study evaluated the effectiveness of an individualized home-based exercise program that included specific turning exercises in improving turning performance in adults identified as having unsteadiness during turning. **Design:** A single-blind (assessors) randomized controlled trial was conducted with 68 community-dwelling Malaysians aged 50 yrs and older, who had abnormal turning performance (outside of age and sex, normal limits on the Step/Quick Turn Test [180-degree turn task on the NeuroCom Balance Master with long plate]). The intervention group received a 16-wk home exercise program that included two turning exercises, whereas the control group maintained their usual activities. **Results:** Significant group \times time effects were found using two-way repeated-measures analysis of variance for turning and balance/mobility measures. The intervention group significantly improved relative to the control group for (1) sway when turning 180 degrees Step/Quick Turn, $F_{1,65} = 8.070$, $P = 0.006$; (2) time to perform 180-degree turn Step/Quick Turn, $F_{1,65} = 8.216$, $P = 0.006$; (3) Timed Up and Go (single task), $F_{1,65} = 6.647$, $P = 0.012$; (4) Timed Up and Go (dual task), $F_{1,65} = 8.301$, $P = 0.005$; and (5) static stance sway, $F_{1,65} = 10.491$, $P = 0.002$. **Conclusions:** An individualized home exercise program that included specific exercises to improve turning ability was effective in improving turning performance in adults older than 50 yrs.

Keyword: Exercise; Postural balance; Adults