

Effectiveness of Balance Training with Balance Postural Sway System Among Elderly Population

Vignesh V¹, Rajeswari M²

¹Post graduate student, ²Faculty of Physiotherapy, Sri Ramachandra Institute of Higher Education and Research, (SRIHER) Porur, Chennai, Tamil nadu, India.

E-mail Id: v.vignesh1999@gmail.com

Abstract

Introduction: Elderly adults have reduced ability to adapt changes in their environment to maintain balance, thereby increasing sway. Older adults find routine exercise programs to be challenging in improving balance. To keep those populations engaged there are several technologies used where Balance Postural Sway System (BPSS) is one among them which helps to assess postural sway and therapeutically used to improve balance. This study intends to analyze the effect of Balance postural sway system (BPSS) training on balance in elderly population.

Methods: This interventional study was conducted in 51 elderly adults above 60 years based on inclusion and exclusion criteria after obtaining informed consent. Interventional group (n=26) underwent balance training with BPSS training whereas control group (n=25) underwent conventional balance training. The BPSS parameters that were used are centre of foot Pressure Xi (COFPXi) and Centre of Foot Pressure Yi (COFPYi) which indicates the centre of foot pressure with lateral sway and anterior posterior sway respectively, Left and right toe heel denotes the weight distribution between toe to heel. The outcome measures used were Fall Efficacy Scale International (FES-I), Berg balance Scale (BBS) and Functional reach test (FRT).

Results: Paired t test showed significant difference in all parameters BPSS- COFPXi, COFPYi, Right toe heel (BBS, FES-I, FRT) except Left toe heel whereas conventional balance training group showed significance in BPSS – COFPYi (FES, BBS, FRT) except in COFPXi, Left toe heel, Right toe heel at p<0.05. Unpaired t test showed BPSS group improved significantly than conventional group in all balance parameters except in BBS at p<0.05.

Conclusion: The findings of this study demonstrate potential benefits of BPSS training on balance parameters and reduction in fall risk. Balance Postural Sway System (BPSS) with force sensors reduce postural sway and improve balance which is safe and effective intervention as it is a game based activity that can be included in the standard practice of care in elderly population.