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The Effect of A Single Intervention of Tactile Feedback (Novel Treatment) Compared to Visual Feedback on Body Sway in the Elderly; A Randomized Clinical Trial

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Ageing process involves many physiological changes that affect body balance. Also, elderly experience higher incidence of diseases that affect body balance. Studies have shown a direct relationship between body sway and incidence of fall in elderly. One-third of the people aged 65 years or older fall every year. About 20-30% of these falls result in fall related injuries that require medical attention. The purpose of this study was to examine the effects of tactile feedback compared to visual feedback on body sway in elderly people. Fifty one subjects were assigned randomly to either visual feedback (mean age 76.1± 7.1 years; n1=29) or tactile feedback (mean age 73.5±6.4 years; n2=22). A balance platform was used to measure average body sway pre and post intervention. Two conditions were used to test body sway: 1) Standing on platform with eyes open and 2) Standing on platform with eyes closed. Intervention consisted of 2 sessions: A) Standing on platform for 4 minutes while holding still and B) Standing on foam for 2 minutes while holding still. Tactile feedback was provided as electrical stimulation resulting in tingling sensation on the lower leg if the sway exceeds 50% of subject's average body sway. A monitor was used to project the motion of the center of pressure to provide visual feedback. Visual feedback did not result in significant reduction in body sway for both conditions. However, tactile feedback resulted in significant reduction in body sway with eyes closed post intervention versus pre intervention (.9± .5 vs 1.3±.9, p=.04) but not with eyes open.

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