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Effectiveness of perturbation based balance training in older individuals

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Ageing commonly disrupts the balance control and compensatory postural responses that contribute to maintaining balance and preventing falls during perturbation of posture due to the weakness of lower limb muscles. For prevention of fall, certain fall prevention programs has to be given to the patients which will mainly focus on the stimulation of primary muscle groups of lower limb that will help in activating the normal balance strategies. The purpose of the study was to establish the effect of PBBT (Perturbation Based Balance Training) added to strengthening and balance exercises in improving balance and to reduce falls among older adults. Forty elderly patients aged 65 to 80 years were randomized in two groups by using block randomization. To the group 1 treatment given was standardized OET which is a set of leg muscle strengthening and balance retraining exercises designed specifically to prevent falls. Group 2 was given PBBT along with OET (Otago Exercise Training). Outcome variables measured on force plate are maximum Center of pressure excursion, minimum Center of pressure excursion and stability score. Other then force plate variables the outcome measure taken was TUG (Timed Up & Go Test). The results were checked after two months. Treatment effect was checked within the group by using paired t test and between the groups by using unpaired t test. The results showed significant difference in values of maximum Center of pressure excursion, minimum Center of pressure excursion and stability score in all the four conditions which are NS EO (Normal Stability Eyes Open), NS EC (Normal Stability Eyes Closed), PS EO (Perturbation Stability Eyes Open) & PS EC (Perturbation Stability Eyes closed) within the group. There was also a significant reduction in the values of TUG. Between groups analysis also show significant effect between both the groups. Findings of this study showed better results in the patients belong to group 2 which were given PBBT along with OET. The PBBT is a useful program for fall prevention. It is also inexpensive and compact commercial perturbation-delivery system which would promote widespread clinical application.

Biography

Parita Desai is a student, pursuing her Master's in Physical Therapy specialized in musculoskeletal disorders and sports from Srinivas College of Physiotherapy and Research Centre, Mangalore, Karnataka affiliated to Rajiv Gandhi University of Health Science, Bangalore, India. She has obtained certification for various fitness instructors training like aerobics, spinning, diet and nutrition, primary and advanced pilates, pre and postnatal fitness and advanced fitness from IAFT- Indian Academy of Fitness training. She has worked as a physio trainer for 3 months at Maximum Fitness Center, Baroda. She has also attended several workshops related to physiotherapy treatment and rehabilitation.

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