

Effect of Motor Imagery of Truncal Exercises on Trunk Function and Balance in Early Stroke: A Randomized Controlled Trial

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Abstract : Background: Studies in the past focused on the additional benefits of action observation in improving upper and lower limb functions and improving activities of daily living when administered along with conventional therapy. Nevertheless, there is a paucity of literature proving the effects of motor imagery of truncal exercise in improving trunk control in patients with stroke. Aims/purpose: To study the effect of motor imagery of truncal exercises on trunk function and balance in early stroke. Methods: A total of 24 patients were included in the study. 12 were included in the experimental group and 12 were included in control group Trunk function was measured using Trunk Control Test (TCT), Trunk Impairment Scale Verheyden (TIS Verheyden) and Trunk Impairment Scale Fujiwara (TIS Fujiwara). The balance was assessed using Brunel Balance Assessment (BBA) and Tinetti POMA. For the experimental group, each session was for 30 minutes of physical exercises and 15 minutes of motor imagery, once a day, six times a week for 3 weeks and prior to the exercise session, patients viewed a video tape of all the trunk exercises to be performed for 15minutes. The control group practiced the trunk exercises alone for the same duration. Measurements were taken before, after and 4 weeks after intervention. Results: The effect of treatment in motor imagery group showed better improvement when compared with control group when measured after 3 weeks on values of static sitting balance, dynamic balance, total TIS (Verheyden) score, BBA, Tinetti balance and gait with a large effect size of 0.86, 1.99, 1.69, 1.06, 1.63 and 0.97 respectively. The moderate effect size was seen in values of TIS Fujiwara (0.58) and small effect size was seen on TCT (0.12) and TIS coordination component (0.13).at the end of 4 weeks after intervention, the large effect size was identified on values of dynamic balance (2.06), total TIS score (1.59) and Tinetti balance (1.24). The moderate effect size was observed on BBA (0.62) and Tinetti gait (0.72). Conclusion: Trunk motor imagery is effective in improving trunk function and balance in patients with stroke and has a carryover effect in the aspects of mobility. The therapy gain that was observed during the time of discharge was seen to be maintained at the follow-up levels.

Keywords : stroke, trunk rehabilitation, trunk function, balance, motor imagery

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