EFFECT OF WEIGHT SHIFT TRAINING DURING SIT TO STAND AND STEP UP TRAINING ON BALANCE AND GAIT MOBILITY IN PATIENTS WITH CHRONIC STROKE SURVIVORS

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Background:

The primary goal of stroke rehabilitation is functional enhancement by maximizing the independence, lifestyle and dignity of the patient. A functional involvement in stroke patients affects activities of daily living and minimizes independence. Stroke treatment in improving ADL and functional activities is inevitable. A new development in stroke treatment in specialized and well-organized manner generated by different neurological treatment approaches includes sit to stand training, step up training and conventional therapy training. There has been research explaining about the importance of sit to stand training, step up training for improvement in functional activities. Hence there is need to compare the effects of sit to stand training, step up training and conventional therapy training on balance and gait mobility among chronic stroke survivors

Introduction:

Stroke is a common neurological disorder, representing a major cause of disability. It is considered as a significant health problem, which needs an unremitting and wide-ranging rehabilitation (Susan B O Sullivan, 2007) [23]. Stroke is also known as “cerebral vascular accident”, “brain attack” or “apoplexy” (Susan S Adler 2008). According to WHO Stroke is defined as “acute onset of neurological dysfunction due to abnormality in cerebral circulation with resultant signs and symptoms that corresponds to involvement of focal area of brain lasting more than 24 hours” (Davis PM 1990). Stroke is an acute onset of neurological dysfunction due to an abnormality in cerebral.
Circulation with resultant signs and symptoms that corresponds to the involvement of focal areas of brain. Focal neurological deficits must persist for at least24 hours clinically; there is a variety of deficits, with the severity of neurological deficits varying from individual to individual depending on the location and extent of lesion. The rate and extent of recovery post stroke depends largely upon the initial degree of impairment on an intact cortex adjacent to lesion and on timing and intensity of the rehabilitation. Initially, improvement of motor activity may occur post stroke because of the recovery of marginally functional neurons and later due to reorganization or relearning of neural functions that is neuroplasticity.
People with hemiplegia following stroke show delayed initiation and execution of stepping reaction and often are found to be unable to initiate these steps with more affected limb. Hence raising a foot on a step appears to be appropriate strategy for weight shift of stroke patients. In this training step-up is applied in various directions. Thus, weight shift training program improves balance and gait mobility among chronic stroke survivors.

CASE DESCRIPTION:

A 55-year-old man was examined 52 days after left haemorrhagic stroke. He required assistance to present a fall in all trials administered during his initial examination because he should weight bearing asymmetry (with more weight bear on the more affected side) was unable to initial stepping with the right leg. & demonstrated delayed response times, the patients completed step up training sit to stand training & conventional therapy training that aimed to improve balance &gait mobility according to FIM scale it should minimally defendant.

TREATMENT PROTOCOL:

- Patient undergone treatment for 4 weeks (5days a week).
- Group A undergo sit to stand training, step up training and conventional therapy exercises.

SIT TO STAND:

- Patient is asked to perform sit – stand position 10 times by alignment in the body center while looking in the mirror in the front.
- Patient is asked to perform sit-stand position 10 times and put the weight on the paretic side with the aid of the therapist.
- Patient is asked to perform sit-stand position 10 times without looking into the mirror. 1 minute rest is allowed after each set, across all training sets.

CONVENTIONAL THERAPY:

- Stretching exercise- 3 repetition 30seconds hold (5days a week)
- Gait training- 20 minutes (3 days a week)
- Strengthening programmer- 3 sets of 10 repetitions (5 days a week)
- Balance training- 5 sets 10 repetitions (5 days a week)

STEP UP TRAINING:

- The paretic foot was constrained by supporting it on a step and the non- paretic foot was kept at ground level.

STEP UP TRAINING PROTOCOL:

- Forward step up- shift the weight anterior towards the paretic side and then return the foot to starting position
- Lateral step up-shift the weight laterally to the paretic side and return to the starting position and for backward step up shift the weight posterior towards the paretic side.
- Each of above activity of step up exercise was repeated with the 3set of 10 repetitions. The rest period of one minute was given after the conclusion of each set and the rest period of five minutes were given after the conclusion of the set before progressing to the next direction of step up activity exercise were given duration of four weeks five times a week. Group B will undergo sit to stand training and conventional therapy exercise.

OUTCOMEMEASURES:

- Berg Balance Scale- to assess the balance.
- Timed Up and Go test to assess the gait and mobility.

RESULTS:

The study result showed that step up training along with sit to stand training and conventional therapy training is effective for the balance and gait mobility among chronic stroke survivors.

DISCUSSION:

This case study illustrates the result is considered to be attributable to the fact that improvement in balance and gait mobility through step training in diverse direction lead to increase in subject confidence.

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