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RESEARCH ARTICLE

A CLINICAL STUDY ON TRUNK MOBILITY TRAINING (TMT) FOR PATIENT WITH CENTRAL NERVOUS SYSTEM DYSFUNCTION: REHABILITATION PERSPECTIVE

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Abstract

Aim: To find out the effects of trunk mobility training (TMT) for patient with central nervous system dysfunction

Objectives:

- To evaluate the trunk mobility of patient with central nervous system dysfunctions
- To give trunk mobility training (TMT) for patient with central nervous system dysfunction
- To compare the effects of trunk mobility training between the group

Methods: This study consists of 12 patients with various dysfunction of central nervous system was randomly assigned into two groups. Control Group received conventional occupational therapy training whereas Experimental group received trunk mobility training (TMT). This training was conducted 45minutes daily, 5 times per week, over a period of 8 week. All patients were tested using a Trunk Impairment Scale (TIS) before and after intervention and this study were conducted in the department of Occupational Therapy, Physical Medicine Rehabilitation, Government Medical College & Hospital, Cuddalore District (Erstwhile RMMCH, Annamalai University), T.N, India

Result: The results were analyzed after the intervention of 8 weeks, Shows Pre and Post value of TIS for patient with central nervous system dysfunction. For Control Group, Shows the mean value of Pre-therapy 8.8333 and SD is 1.8633 and post-therapy mean value is 11.5 and SD is 0.7637. The 't' value is 3.7300 and 'p' value is less than 0.0005. The Pre and post therapy value of TIS for patient with central nervous system dysfunction, for Experimental Group Shows the Pre-Therapy mean value is 11.50 and the SD is 1.8027 and Post-therapy mean value is 18.666 and SD is 0.9428. The 't' value is 10.1919 and 'p' value is less than .0001.

Conclusion: This study concluded that, The Trunk Mobility Training (TMT) has more effective in the treatment of trunk balance for patient with central nervous system dysfunction of Some of the Patients were also reported that, this Training improves their daily living activity and overcome their functional limitation.

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Introduction:-**Central nervous system dysfunction**

Central nervous system dysfunction can be serious and have serious clinical consequences and it can be caused by number of conditions including, Alzheimer's diseases, Cerebrovascular accident / stroke, multiple sclerosis, Parkinson's diseases.

Central nervous system dysfunction can cause a range of symptoms and signs, including loss of consciousness, muscle weakness or Paralysis, Headache, Confusion, loss of intellectual abilities almost these patients will have motor, perception and cognitive dysfunction. One of the chief or serious conditions is Cerebrovascular accident / stroke

Cerebrovascular Accident:

Cerebrovascular accident/ Stroke is a complex dysfunction caused by a lesion in the brain. The world health organization defines Cerebrovascular accident as an acute neurologic dysfunction of vascular origin with symptoms and signs corresponding to the involvement of focal areas of the brain. Cerebrovascular accident results in upper motor neuron dysfunction that produces hemiplegia or paralysis of one side of the body, including the limbs and trunk and sometimes the face and oral structures that are contra lateral to the hemisphere of the brain with the lesion. Accompanying the motor paralysis may be variety of dysfunction other than the motor paralysis. Some of those dysfunctions include Sensory dysfunction, Cognitive and Perceptual dysfunction, Visual disturbance, Personality and Intellectual changes and a complex range of speech and associated language disorder.

The prevalence of Cerebrovascular accident in India the estimated adjusted prevalence rate of Cerebrovascular accident range, 84 -262 / 100,000 in rural and 334-424 / 100,000 in urban areas. The incidence rate is 119-145 / 100,000 based on the reason population.

The prevalence of Cerebrovascular accident in Tamil Nadu -the incidence of Cerebrovascular accident is maximum in the age group of 51-60 years comprise 34.28 %. young patients who are affected with Cerebrovascular accident where 10.71% of patients. Cerebral infraction was more than hemorrhage. Males were more affected than females in ischemic stroke as well as hemorrhagic.

Therefore, this study was selected to find out the effects of trunk mobility training for patients with Central nervous system dysfunction.

Trunk Mobility Training

Trunk mobility training improves the function of muscles and tendons by stimulating the proprioceptive sense, which enhances Muscle Strength, Balance, and Flexibility. It's an ability of trunk muscles to allow the body to remain upright adjust weight shift and perform selective movement of the base of support during static and dynamic postural adjustments. Trunk mobility activities like Trunk rotational (Twists), Lateral trunk flexion (oblique crunches), Forward punches, Lateral punch, Leg Rotation, Leg raise, Bridges, Crunch, knee to chest, toe taps.

This type of trunk training is more useful to improve trunk performance in stroke patients. Trunk function is associated with balance, walking ability and activities of daily living.

Methodology:-

This study consists of 12 patients with Central nervous system dysfunction were randomly assigned into two groups. Patients were assessed for trunk mobility using Trunk Impairment Scale (TIS) based on the inclusion and exclusion criteria. Control group received conventional occupational therapy training whereas experimental group received trunk mobility training (TMT). This training was conducted 45minutes daily, 5 times per week, over a period of 8 week. All patients were tested using a Trunk Impairment Scale (TIS) before and after intervention and this study were conducted in the department of Occupational Therapy, Physical MedicineRehabilitation, Government medical college & hospital, Cuddalore District (erstwhile RMMCH, Annamalai University), T.N, India

Protocol for Trunk Training:

Trunk training improves the trunk performance as well as mobility, balance, functional motor tasks each exercise performed at 5 mints totally 45 mints per session.

Sitting Exercise**Static Sitting Balance**

Position: Sitting

PROCEDURE: The patient is made to sit with his hips and knees in 90 degree of flexed position then his body alignments is corrected by giving verbal comment to maintain proper position.

Trunk Forward Flexion:

Position: Sitting

Procedure: The patient flexes and extends the trunk without moving the trunk forward or backward flexion and extension of the lumbar part of the spine. This involves Antero flexion of the lower part of the trunk.

Trunk Lateral Flexion:

Position: Sitting

PROCEDURE: Lateral Flexion of the trunk initiated from the shoulder and pelvic girdle from the shoulder girdle means that the patient touches the exercise table with one elbow and returns to the starting position from the pelvic girdle means that the patient lifts one side of the pelvis and returns to the starting position.

Trunk Rotation

Position: Sitting

Procedure: The patient clasps his hands around his chest moves each shoulder forward and backward alternatively keeping his lower trunk stable

Supine Exercise**Weight Shift:**

Position: Supine lying

PROCEDURE: patient shift the weight from one side to the other both in anteroposterior and mediolateral direction. That is, moves forward and backward and side to side on the mat.

Bridging:

POSITION: Supine lying

PROCEDURE: This is done with the legs bend and the feet resting on the mat, included selective anterior and posterior movements of the pelvis and extension of the hip, the weight bearing at shoulder and the feet

Unilateral Pelvic Bridging:

Position: Supine lying

Procedure: Done with one foot resting on the mat and lifting the pelvis of the mat with the other leg raised in the air for about 60 degree of the Hip flexion and Knee extension. weight bearing is on the shoulder and on the foot of the leg which is placed on the mat

Need for the Study:-

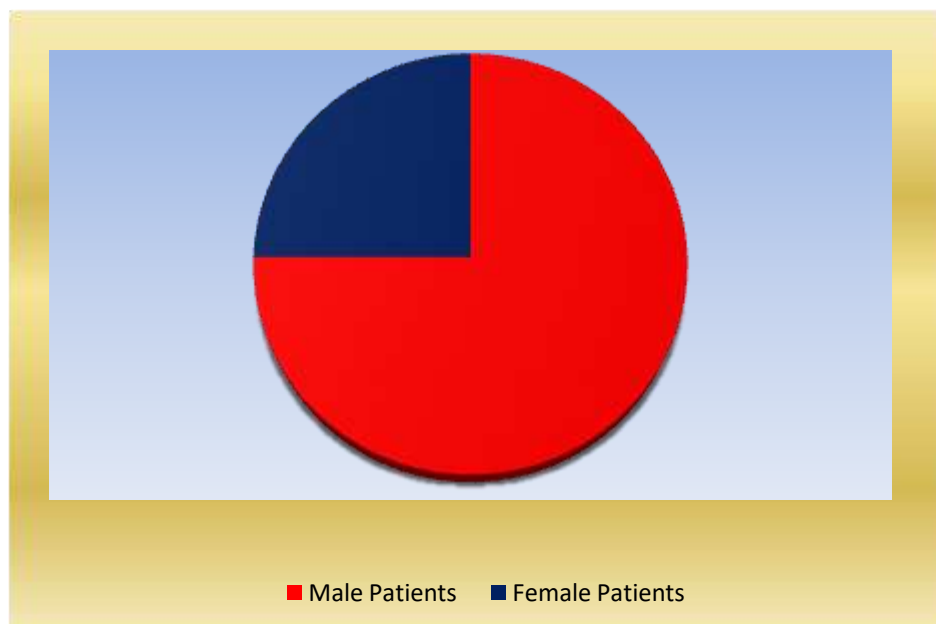
To create knowledge among Medical, Para medical and other Health care Professional as well as public

Result:-

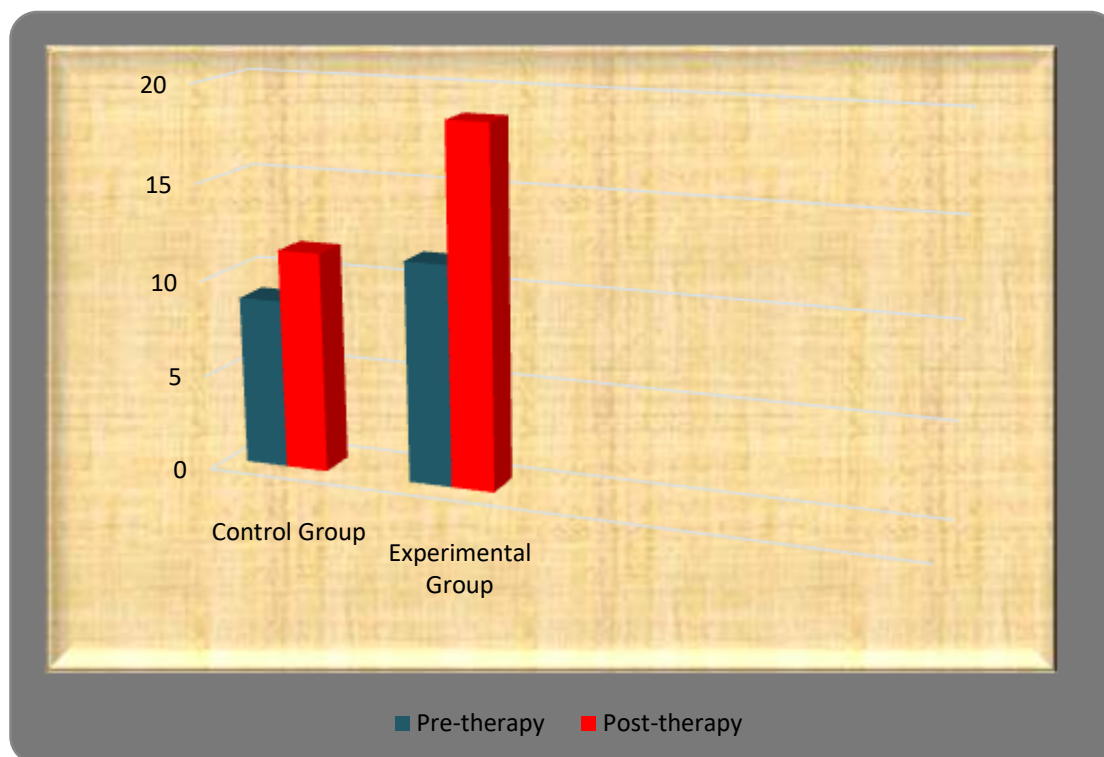
The results were analyzed after the intervention of 8 weeks, Shows Pre and Post value of TIS for patient with dysfunction of central nervous system. For Control Group, Shows the mean value of Pre-therapy 8.8333 and sd is 1.8633 and post-therapy mean value is 11.5 and sd is 0.7637. The 't' value is 3.7300 and 'p' value is less than 0.0005.

The Pre and post therapy value of TIS for patient with dysfunction of central nervous system for Experimental Group Shows the Pre-Therapy mean value is 11.50 and the SD is 1.8027 and Post-Therapy mean value is 18.666 and SD is 0.9428. The 't' value is 10.1919 and 'p' Value is less than .0001.

This Pie Chart Shows, Male Vs Female patients participated in this study



This bar diagram shows, Pre-therapy and Post-therapy values of Trunk Impairment Scale for patients participated in both Control and Experimental Group



Conclusion:-

Through this study, it is concluded that, the Trunk Mobility Training (TMT) has more effective in the treatment of trunk balance for patient with central nervous system dysfunction.

Some of the Patients were also reported that, as this training improves their daily living activity, also overcome their functional limitation.

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Conflict of Interest:-

I confirmed no potential conflicts of interest with respect to the research.

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