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## ORIGINAL ARTICLE

### A COMPARATIVE STUDY BETWEEN MOTOR RELEARNING PROGRAMME AND FELDENKRAIS METHOD FOR POST STROKE

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#### ABSTRACT

**Background And Purpose:** Stroke, Cerebrovascular Accident is sudden loss of neurological condition caused by a blood supply to part of brain blocked or reduced. Objective of the study is to compare the effectiveness of Motor Relearning Programme and Feldenkrais method for post stroke. **Method:** The treatment procedure was explained to the patient. There were 30 patient with stroke were selected based on the inclusion and exclusion criteria and they were divided into 2 Groups, Group A and Group B. First Group A was treated with Motor Relearning Programme technique on post stroke. Second group B was treated with Feldenkrais method on post stroke. Timed Up and Go Test and Berg Balance Scale were used as outcome measures. The pre and post test were measured before and after 4 weeks for comparison. **Result:** The result of this study showed that there was significant improvement in both groups. The subject who participated in experimental Group A had shown significant improvement on mobility than Group B. **Conclusion:** The study which was conducted for 5 weeks period of intervention showed that group A, who received Motor Relearning Programme resulted improvement in mobility than the Group B who received Feldenkrais Method for post stroke.

**Keywords:** Motor Relearning Programme, Feldenkrais method, Timed up and Go test, Berg Balance Scale.

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## INTRODUCTION

Stroke is sudden loss of neurological condition caused by an blood supply to part of brain blocked or reduced<sup>1</sup>.The cause of stroke are atherosclerosis, Clotting disorder heart defect [Atrial septal defect ventricular septal defect], Micro vascular ischemic diseases , High BP ,Brain aneurysms ,Brain tumors ,Smoking, Type 2 diabetes, High cholesterol and drug misuse<sup>2</sup>.The symptoms of stroke are one – sided weakness (or) Paralysis, Aphasia, Dysarthria, Loss of muscle control on one side of face , Diplopia, Ataxia, Vertigo , Seizure, Headache and Memory loss<sup>3-5</sup>.

The MRP for stroke was developed by Janet Carr and Roberta this programme includes many aspects of motor learning theory and provides practical guidelines for retraining the functional skills. Because after the attack of stroke their gait is often slow, poor balance, losing independence and function. There is an evidence of effectiveness in task specific training. Retraining of motor control based on understanding of normal movement through the analysis of motor dysfunction<sup>6-8</sup>.

Based on the factors such as elimination of unnecessary muscle activity and feedback of practice, the steps that involved in motor relearning programme are analysis off unction, practice of missing components, practice of activity, transference of learning<sup>8-10</sup>.

The Feldenkrais method was developed by Dr. Moshe Feldenkrais .He had believed that unity of body and mind is an objective reality.It is a gentle mindful movement based on principle of physics Biomechanics, motor development, psychology, Martial arts and reconnection of

self education to how the body moves and develop. There are two types of Feldenkrais practice. Awareness through movement is a group technique, participants learning through verbally guided movement, the word teaching indicates that changes in self image are produced by pupil, through becoming aware of changed body image<sup>9,10</sup>.

## METHOD AND PROCEDURE

The study was conducted at the department in J.K.K. Munirajah medical research Foundation College of physiotherapy. The sample sizes include 30 subjects. These subject were selected by random sampling method .They were divided into two groups. Group A and Group B with15 subject in each group. Group A patient were treated with Motor Relearning Programme.

Study duration: 4weeks, 4sessions, for each week, One hour per session.

**Inclusion criteria:** No serious unstable medical complication, age between 45 to 60 yrs both Male and female, subjects with 3 to 4 months post stroke, not receiving any other form of therapy.

**Exclusion criteria:** Neurological disorder other than stroke Orthopedic disorder, Visuo-spatial or visual deficit, Unhealed fracture in lower limb, any cardiac problem Uncontrolled hypertension, Cognitive deficits Deafness Aphasia.

### Procedure:

- 30 patients with stroke were be selected based on the inclusion and exclusion criteria and they was be divided into 2 groups, GROUP A and GROUP B.
- A pre test and post test were be conducted for the GROUP A and GROUP B on timed up and go test(TUG) and berg balance scale for

post stroke.

- First group A were treated with Motor Relearning Programme technique on post stroke.

Second group B was treated with Feldenkrais method on post stroke Pretest and post test was recorded

#### Intervention for Group A:

This group received MRP of 30 minutes duration and it was given in a single session MRP was divided into 10 minutes in which sit to stand and sitting down were practiced and 20 minutes in which walking were practiced.

Sitting to standing Stand to sit, walking

- Train hip extension
- Train knee control
- Train lateral horizontal pelvic shift
- Train flexion of knee at swing phase
- Train knee extension and foot dorsiflexion at heel strike

#### Intervention for Group B:

This group received Feldenkrais method for 30 minutes in a single session.

A. Initially Start with bare foot touching on ground ( its stimulating the sensory receptors in foot)

B. Imagine a line while walking on the ground

C. Walking on the imaginary line (forward and backwards)

D. Walking in a imaginary line forward and backward (with eyes closed)

E. Weight shift on the foot( pick up one foot then laid down on the foot with knee bend same on the other foot )

F. Get up and down the floor(going down on one knee and come up on another knee)

#### RESULTS

Descriptive statistics for Timed Up and Go Test- Group A and Group B

GROUP	TUG	Mean	Standard Deviation	Paired 't' value
GroupA	Pretest	24.47	2.17	17.4130
	Post test	15.40	1.72	
GroupB	Pretest	25.53	2.64	18.0508
	Post test	20.00	2.73	

**Table 1:** Descriptive statistics for Timed Up and Go Test- Group A and Group B

Descriptive statistic for Timed Up and Go Test in Group A shows that paired't' test values of pre vs. post-test values of Group A was 17.4130 at 0.05% level which was greater than

tabulated 't' values 2.14. Group B shows that paired't' test values of pre vs post-test values of Group B was 18.0508 at

0.05% level which was greater than tabulated 't' values 2.14. This showed like there in significant difference between pre vs. post-

test results of Group A and Group B for TUG. This exposed that there was significant reduction in post- test mean values in response to TUG in Group A and Group B.

**RESULT**

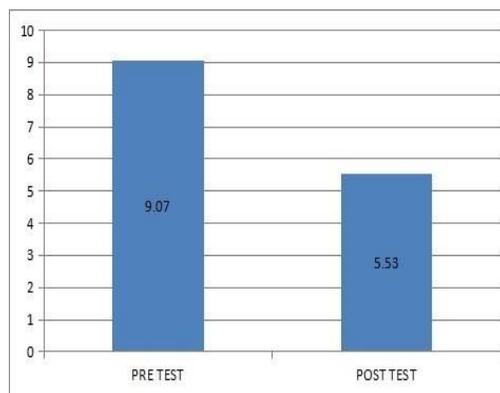
**Timed up and Go test**

Time up and go test	Mean	mean Difference	standard Deviation	Unpaired 't' value
Group A	9.07	3.53	2.02	5.8478
Group B	5.53			

**Table 2:** Timed up and Go test analysis between Group A and B

The above table shows the post test analysis result in TUG for Group A and B.

The mean value of Group A is 9.07 which was greater than Group B value of 5.53 and the unpaired 't' test value was 5.8478 at 0.0001 level which was greater than tabulated 't' value .It showed statistical significance difference between mean value of Group A and B. Therefore the present study was accepting the alternate hypotheses and rejecting the null hypotheses.



**Graph 1:** TUG test Graph between group A and group B

**Descriptive statistics for Berg Balance Scale-Group A and Group B**

GROUP	BBS	Mean	Standard Deviation	Paired 't' value
GroupA	Pretest	25.80	2.86	20.1723
	Post test	35.20	2.60	
GroupB	Pretest	25.40	2.16	15.6165
	Post test	30.87	1.60	

**Table 3:** BBS scale descriptive statistics for Group A and Group B

Descriptive statistic for Berg Balance Scale in Group A shows that paired 't' test values of pre vs post-test values of Group A was 20.1723 at 0.05% level which was greater than tabulated 't' values 2.14. Group B shows that paired 't' test values of pre vs post-test values of Group B was 15.6165, At 0.05% level which was greater than tabulated 't' values 2.14. This showed there is significant difference between pre vs post-test results of Group A and Group B for BBS. This exposed that there was significant reduction in

post- test mean values in response to BBS in Group A and Group B.

**RESULT**

**Berg Balance Scale**

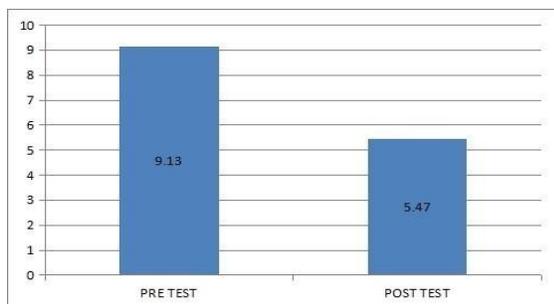
Berg balance scale	Mean	Mean Difference	Standard Deviation	Unpaired 't' value
Group A	9.13	3.67	2.13	5.6176
Group B	5.47		1.36	

**Table 4:** BBS scale analysis between group A and group B.

The above table shows the posttest analysis result in BBS for Group A and B. The mean value of Group A is 9.13 which was greater than Group B value of 5.47 and the unpaired 't' test value was 5.6176 at 0.0001 level which was greater than tabulated 't' value. It showed statistical significance difference between mean value of Group A and B. Therefore the present study was accepting the alternate hypotheses and rejecting the null hypotheses.

**DISCUSSION**

The aim of the study was to compare the effect between Motor Relearning Programme and Feldenkrais method for improving the basic mobility in post stroke. A total number of 30 subjects with post stroke were selected by experimental study design method after considering the inclusion and exclusion criteria. The informed consent was obtained from subject individually. Timed Up and Go Test and Berg Balance Scale were taken as parameters. Pre test data were collected for Group A and Group B patient. Group A patients were subjected to Motor Relearning Programme and Group B patients were subjected to Feldenkrais Method for a period of 4 weeks.



**Graph 2:** BBS scale graph between group A and group B.

The results of the same parameters were recorded for comparison after 5 weeks of treatment. The result showed that there was statistical significant difference between Group

A and B. The Group A who were treated Motor Relearning Programme shown good improvement in mobility than Group B who was treated with Feldenkrais Method<sup>11,12</sup>.

In analysis and interpretation of TUG was done in group A and group B. The table shows the posttest analysis result in TUG for Group A and B. The mean value of Group A is 9.07 which was greater than Group B value of 5.53 and the unpaired 't' test value was 5.8478 at 0.0001 level which was greater than tabulated 't' value. It showed statistical significance difference between mean value of Group A and B. In analysis and interpretation of BBS was done in group A and group B. The table shows the posttest analysis result in BBS for Group A and B<sup>13</sup>.

The mean value of Group A is 9.13 which was greater than Group B value of 5.47 and the unpaired 't' test value was 5.6176 at 0.0001 levels which was greater than tabulated 't' value. It showed statistical significance difference between mean value of Group A and B. Therefore the present study was accepting the alternate hypotheses and rejecting the null hypotheses. Functional integration individual lesson with practitioners was learning by gentle touch which reorganizes the connection between brain and body to improve body movements of psychological state<sup>14</sup>.

It repairs impaired connection between motor cortex and body<sup>7</sup>. This method helps to get rid of body aches and pain improve posture, eliminate discomfort, Achieve balance and co-ordinations which increases body kinaesthetic sensitivity<sup>8</sup>. The Feldenkrais involve slow work with more attention and awareness in order to change habit which decreases the pull of gravity in nervous system which is the major one of re-educating the body. The reason of

the improvement may be the physiological changes shown in above literature when compared<sup>15</sup>.

## CONCLUSION

Based on statistical analysis, the result of this study showed that there was significant improvement in both groups. The results also showed that the subject who participated in group A had shown good improvement on mobility than group B. Based on the results, this study concluded that improvement on mobility in post stroke mean while the effect on motor relearning programme is more effective.

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