

Effectiveness of Mirror Therapy on Motor Function among Patients with Cerebro Vascular Accident

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Abstract

The study was conducted to evaluate the effectiveness of mirror therapy on motor function among patients with cerebro vascular accident. Quasi experimental non- randomized control group design was adopted for the study. The sample were selected out of 60 samples, 30 were in study group and 30 in control group. Mirror therapy was given for 30 minutes to the study group for 10 days and with holded for control group. Post test was done for both study group and control group after 14 days. The findings revealed that, in study group, the mean score on level of motor function among patients with Cerebro Vascular Accident in study group was 1.46 in pre test and 2.46 in post test. The estimated paired 't' value was 8.41 which was significant at $p \leq 0.05$. Hence the research hypothesis (H_1) was accepted. The mean score on level of motor function among patients with Cerebro Vascular Accident in study group was 2.46 and in control group was 0.71. The estimated unpaired 't' value was 6.25 which is significant at $p \leq 0.05$. Hence the research hypothesis (H_2) was accepted. The study concluded that the Mirror therapy is effective to improve the level of motor function among patients with Cerebro Vascular Accident.

Keywords: Effectiveness, Mirror therapy, Motor function, Cerebro Vascular Disease

Introduction

A Cerebro Vascular Accident is also named as stroke or brain attack and is caused by a disruption of the blood supply to a part of the brain by a blood clot or ruptured artery, where the brain does not get the essential nutrients and oxygen needed. There are two major types of stroke: Ischemic and Hemorrhagic stroke. Approximately 88% of stroke are ischemic strokes an ischemic stroke happens when the blood flows through the artery that supplies oxygen gets blocked. Hemorrhagic stroke of approximately 12% of hemorrhagic stroke occurs when a cerebral artery in the brain leaks blood and spills it over the brain tissue⁹. The principle of Mirror therapy is used to create a reflective illusion of an affected limb in order to trick the brain into thinking, that the movement has occurred without pain. Mirror therapy was introduced by Ramachandran and Roger Ramachandran to treat phantom limb pain. The preliminary findings suggest that mirror therapy can be a useful intervention in rehabilitation of Cerebro Vascular Accident patients. It provides simple and cost effective

therapy for wrist and hand motor recovery in acute and sub acute stroke patients. Mirror therapy has shown positive effects on its feasibility, treatment of stroke rehabilitation and management of patients regional pain syndrome. The mirror therapy is effective in stroke complex regional pain syndrome, cerebral palsy and fracture rehabilitation¹⁰.

Statement of the Problem: A Quasi-experimental Study to Evaluate the Effectiveness of Mirror Therapy on Motor Function Among Patients With Cerebro Vascular Accident in the Selected Hospitals at Kanyakumari District.

Objectives:

- To assess the pretest and posttest level of motor function among patients with Cerebro Vascular Accident in study group and control group.
- To evaluate the effectiveness of Mirror Therapy on motor function among patients with Cerebro Vascular Accident in study group and control group.

To find out the association between pretest level of motor function among patients with Cerebro Vascular Accident with their selected demographic and clinical variables in study group and control group.

Hypotheses:

H₁: There is a significant difference between pretest and post test level of motor function among patients with Cerebro Vascular Accident in study group and control group.

H₂: There is a significant difference between post test level of motor function among patients with cerebro vascular accident in study group and control group.

H₃: There is a significant association between pre test level of motor function among patients with Cerebro Vascular Accident with their selected demographic and clinical variables in study group and control group.

Research Methodology

Research Approach: The researcher utilized Quantitative research approach.

Research design: Quasi Experimental Non Randomized control group design was utilized to perform the study

Research setting: The study was conducted at two hospitals, kanyakumari district.

Population: Patients with Cerebro Vascular Accident

Sample: Patients with Cerebro Vascular Accident at the age group 30-70 years with unilateral stroke

Sample size: 60 samples were selected for this study with unilateral stroke who fulfilled the inclusion

criteria 30 samples were in study group and 30 samples were in control group.

Sampling technique: Purposive sampling technique

Description of Tool: The tool used in the study consists of 2 parts

Part-1: Demographic data (Annexure VI): In this part demographic variables such as Age, Sex, Education, Occupation, Marital status, Types of food, Types of family and clinical variables like Types of lesions, Side affected in stroke, Co-morbidities history, Duration of illness, Habits of alcoholism, Habits of smoking.

Part -2: Modified Ashworth Scale: This part of the tool consist of Modified Ashworth Scale to assess the motor function of cerebro vascular accident. Scoring interpretation is No disability, No Significant disability, Slight disability, Moderate disability, Moderately Severe disability, Severe disability

Method of Data Collection:

Phase I Selection of Cerebro Vascular Accident patient: After obtaining permission from the Principal of St Xavier’s Catholic College of Nursing Chunkankadai the participants were selected based on the inclusion and exclusion criteria and oral consent from each sample and proceeded with data collection.

Phase II Pre test: Investigator the Modified Ashworth Scale was used to assess the level of motor function in group and control group

Phase III Intervention: Study group received Mirror therapy and control group received hospital routine care.

Phase IV Post test: The post test was conducted after 14 days with Modified Ashworth Scale.

Results

Table I: Comparison of mean standard deviation and paired ‘t’ value on pre test and post test level of motor function among patients with Cerebro Vascular Accident in study group and control group (N=60)

Variables	Group	Mean	SD	Df	Paired ‘t’ test
Level of motor function	Study GroupPre test	1.46	0.61	29	8.41*
	Post test	1.6	0.728		
	Control GroupPre test	2.46	0.61	29	3.98*
	Post test	2.43	0.71		

*Significant at p <0.05

Table II: Comparison of mean, standard deviation and unpaired ‘t’ test on post test level of motor function among patients with Cerebro Vascular Accident in study group and control group. (N=60)

Variables	Group	Mean	SD	Un paired ‘t’ test
Level of motor function	Study Group (n=30)	1.46	0.61	6.25*
	Control Group (n=30)	2.43	0.71	

*Significant at $p < 0.05$

Discussion

The aim of the study was done to evaluate the effectiveness of Mirror Therapy on motor function among Cerebro Vascular Accident patient. Mirror therapy was an effective, inexpensive and non pharmacological measure for improving upper extremity motor function. The finding reveals that, the mean score on level of motor function among patients with Cerebro Vascular Accident in study group was 1.46 and the control group was 0.61. The estimated unpaired ‘t’ value was 6.25 which was significant at $p \leq 0.05$. It shows that mirror therapy was effective and reduced the level of motor function. Hence the research hypotheses H_1 was accepted. In study group and control group the calculated value of demographic variables were lesser than table values which indicate that, there is no significant association between mirror therapy and demographic variables. Hence the hypotheses (H_2) was not accepted. As per the study that the Mirror therapy was effective to improving the level of motor function among patients with Cerebro Vascular Accident.

Based on the data collected the mean score on the level of motor function in study group was 3 in pre test and 1.6 in post test the paired ‘t’ test value is 8.41 which is significant at $p < 0.05$. It shows that the mirror therapy is effective in reducing the level of motor function among patients with Cerebro Vascular Accident. From the result the researcher concluded that mirror therapy was effective in improving the level of motor function among patients with Cerebro Vascular Accident.

Conclusion

The study concluded that providing mirror therapy was effective to improving the level of motor function among patients with Cerebro Vascular Accident.

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Conflict of Interest: There was no conflict of interest

Source of Fund: Self funded

Ethical Clearance: The proposed study was conducted after the approval of the dissertation committee of St. Xavier’s Catholic College of Nursing. Permission was obtained from Directors of PS Medical Trust and Kevin Neuro Centre. Oral consent was obtained from each participants before starting the data collection. Assurance was given to the study participants regarding the confidentiality of the data collection.

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