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A Study to Evaluate the Effectiveness of Sensory Stimulation Program (SSP) on Motor Function (MF) and Verbal Response (VR) Among Patients with Stroke in ICU of Selected Hospitals at Salem

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Abstract

Introduction:Stroke is a medical emergency and can cause permanent neurological damage, complications and death. Objectives: (1)To develop and validate a Sensory Stimulation Program aimed at enhancing motor function (M.F) and vital signs recovery (V.R) in stroke patients. (2)To evaluate and compare the pre-test and post-test scores of M.F and V.R in stroke patients receiving routine nursing care. (3)To assess and compare the pre-test and post-test scores of M.F and V.R in stroke patients who undergo the Sensory Stimulation Program in addition to routine nursing care. (4) To explore the connection between the M.F. and V.R. of the experimental group and their demographic characteristics, such as age and identified stroke risk factors. Hypotheses: H_1: Patients with stroke who undergo the Sensory Stimulation program are expected to have significantly higher scores in motor function (M.F) and vital signs recovery (V.R) compared to those who receive only routine nursing care.H_2: A notable correlation is anticipated between the post-test scores for motor function (M.F) and vital signs recovery (V.R) in the experimental group and their chosen demographic variables. (Age, selected risk factors for stroke) Methods: This was quantitative quasi-experimental pre-test post-test design study. The Samples were the stroke patients undergoing treatment in Selected Hospital in Salem with mild Motor function and verbal response. The sampling technique employed was a non-random convenience sampling method. Demographic data was collected to capture the characteristics of the sample. It included age, gender, marital status, Role of an individual, Risk factors associated with stroke. A rating scale was used to evaluate motor function and verbal response in the samples, based on the Glasgow Coma Scale (GCS) scoring system. The score was categorized and it consists of 3 components such as eye opening, verbal response, motor response. Results: The study findings indicate that, in the pre-test assessment, 87% of patients exhibited poor motor function and verbal response, while 13% showed moderate motor function and verbal response. In the post-test results, 60% of participants displayed good motor function and verbal response, 27% showed moderate motor function and verbal response, while 13% exhibited poor motor function and verbal response. The mean pre-test motor function and verbal response score was 5.4. The mean post-test motor function and verbal response score was 8.3. The mean paired 't' test value was significantly higher than the table value (t_{14}=14.32 > table value =2.145) at p<0.05 level. The mean post-test motor function and verbal response score for the experimental group was 8.3, while the control group had a mean score of 6.8. The unpaired 't' test value was significantly higher than the critical value (t28 = 4.16 > table value = 2.78) at the p < 0.05 level. However, no meaningful correlation was observed between the post-test scores for motor

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function and verbal response and factors such as age or identified stroke risk factors in the patients. Conclusion: The results suggest that the Sensory Stimulation Program is effective in enhancing motor function and verbal response in stroke patients.

Keywords: Stroke, sensory stimulation program, motor function, verbal function, evaluate

INTRODUCTION

A stroke is a medical emergency that can cause lasting neurological damage, complications, and potentially death. Also referred to as a cerebrovascular accident, it happens when blood flow to the brain is suddenly interrupted, leading to a loss of brain function. This disruption can result from either a blockage (infarction) or bleeding (hemorrhage). Individuals who experience a stroke often face sensory deprivation, as their capacity to respond to both internal and external stimuli is impaired. Early implementation of a sensory stimulation program during the recovery phase can help support the healing process and mitigate sensory deprivation [1].

In the United States, stroke is the leading cause of disability, with about two-thirds of survivors facing long-term neurological impairments. Timely and appropriate interventions can reduce the long-term impact of stroke, leading to better patient outcomes and increased satisfaction. Stroke survivors often need to relearn daily living activities while coping with their remaining disabilities. Targeted rehabilitation efforts in specific areas can significantly improve the patient's ability to adapt and manage their condition. Stroke is an common condition that affects people above 40 years of age. Each year, approximately 700,000 to 750,000 individuals in the United States and around 50,000 in Canada suffer a stroke. In total, there are approximately 4.5 million stroke survivors in the U.S. and up to 300,000 in Canada. As the population ages, the incidence of stroke is expected to increase [2].

Sensory stimulation, when provided at the right time, plays a crucial role in helping patients overcome severe sensory deprivation, particularly in unconscious individuals. Efforts are made to preserve the normal daily rhythm by maintaining regular patterns of activity and rest. Nurses interact with patients by touching and talking to them, and they encourage family members and friends to do the same. Effective communication is vital, which includes not only physical contact but also spending enough time with the patient to better understand their needs. Furthermore, it is crucial to avoid making negative remarks about the patient's condition or outlook, as these can influence the patient's emotional reaction [3].

The nurse ensures that the patient is oriented to time and location at least once every 8 hours. Familiar sounds from the patient's home or workplace can be played using a tape recorder to provide comforting auditory stimuli. Family members can also read aloud from the patient's favourite book and recommend radio or television programs the patient once enjoyed, helping to enrich the environment with familiar sensory input [4].

Unconscious patients experience sensory deprivation as their ability to react to both internal and external stimuli is impaired. To prevent sensory deprivation after stroke patient, a Sensory Stimulation Program begin in the early stage of stroke may be useful Sensory Stimulation Program on stroke treated with Sensory stimulation protocol source a behaviour changes as a result of stimulation. An individualized sensory stimulation program helps in the early stages of stroke to stimulate the Reticular Activating System which improve the consciousness and promotion of the brain functions [5-8].

NEED FOR THE STUDY

Stroke patients are fully dependent on healthcare providers to fulfill their needs. As a result, these patients need assistance to maintain as much safety and independence as possible. Their care must be well-coordinated to address all their needs.

Stroke ranks as the third leading cause of death in the United States, following heart disease and cancer, and is a significant cause of adult disability. It accounts for approximately 160,000 deaths annually. In 2004, the Indian Council of Medical Research (ICMR) estimated that there were 930,000 stroke cases and 640,000 stroke-related deaths in India. The data also highlighted that a significant proportion of those affected in India were under the age of 45. In 2004, experts estimated that stroke-related deaths and disabilities resulted in a loss of 6.3 million disability-adjusted life years (DALYs) in India. The World Health Organization (WHO) predicts that by 2050, 80% of global stroke cases will occur in India and China, primarily affecting individuals from low- and middle-income backgrounds [9].

Approximately 750,000 strokes are expected to occur this year, with 550,000 of these potentially preventable. African Americans experience higher stroke-related mortality rates compared to white populations, which may be linked to a greater prevalence of hypertension, obesity, and diabetes mellitus among African Americans. Each year in the United States, there are around 50,000 cases of cranial haemorrhage, 25,000 cases of subarachnoid haemorrhage, and 400,000 cases of ischemic stroke [7].

Every year, approximately 250,000 people in the United States die from cerebrovascular disease. Stroke rehabilitation should commence as soon as the patient is stable, typically within 24 to 48 hours after the stroke occurs. The primary goals of rehabilitation are to help patients achieve the highest possible level of independence and quality of life, while supporting long-term recovery. Rehabilitation usually begins in the Intensive Care Unit (ICU) of a hospital. In countries like India, nurses play a crucial role in delivering patient care. Additionally, involving primary caregivers in sensory stimulation programs ensures continuity of care and can help reduce healthcare costs [10].

Educating caregivers on the importance of auditory and tactile stimulation is essential for promoting patient care and enhancing satisfaction. From the researcher's perspective, many stroke patients are often reluctant to use the affected area due to lack of motivation, and financial constraints may prevent them from seeking physiotherapy services. With this in mind, the researcher became interested in conducting this study, which could benefit both patients and their families [11].

OBJECTIVES

- To develop and validate a Sensory Stimulation Program aimed at improving motor function (M.F) and verbal response (V.R) in stroke patients.
- To evaluate and compare the pre-test and post-test scores of motor function (M.F) and verbal response (V.R) in stroke patients receiving routine nursing care.
- To evaluate and compare the pre-test and post-test scores of motor function (M.F) and verbal response (V.R) in stroke patients receiving the Sensory Stimulation Program alongside standard nursing care.
- To examine the relationship between the motor function (M.F) and verbal response (V.R) in the experimental group and their demographic variables (such as age and selected stroke risk factors).

HYPOTHESES: (The Level of Significance at 0.05)

- *H1*: Stroke patients who participate in the Sensory Stimulation program will show significantly higher scores in motor function (M.F) and verbal response (V.R) compared to those who receive only routine nursing care.
- *H2*: A significant correlation is expected between the post-test scores for motor function (M.F) and verbal response (V.R) in the experimental group and their chosen demographic variables, including age and identified stroke risk factors.

OPERATIONAL DEFINITION

Assumptions

1. Sensory stimulation program may be beneficial as early treatment to prevent the sensory deprivation among patients with stroke.
2. Music therapy induces in-depth stimuli to the brain.

ETHICAL CONSIDERATION

Approval was obtained from the relevant authorities in the hospital to carry out the study. Informed consent was obtained from both the patient and their family members after the study's objectives were thoroughly explained.

DELIMITATIONS

1. The data collection period was 6 weeks.
2. The study is delimited to patient who is having hearing ability
3. The patient who are able to speak the language Tamil or English.

RESEARCH METHODOLOGY

Research Approach

Given the nature of the problem under investigation and the objectives of the study, a quantitative evaluative research approach was deemed appropriate for assessing the effectiveness of the Sensory Stimulation Program (SSP) on motor function and verbal response in stroke patients.

RESEARCH DESIGN

The study used a quasi-experimental design that included pre-test and post-test evaluations (Table 1).

Table 1. Schematic representation of research design.

	Day 1	**Day 1-5**	**Day 5**
Experimental group	O1	X	O2
Control group	O1	-	O2

Key:

C: Control group
E: Experimental group
O_1: Evaluation of pre-test motor function and verbal response in stroke patients.
X: Sensory Stimulation Program provided to stroke patients.
O_2: Evaluation of post-test motor function and verbal response in stroke patients.
-: Routine nursing care

SETTING OF THE STUDY

The setting refers to the physical surroundings and circumstances in which data collection takes place.

The study was carried out at a selected hospital in Salem.

DESCRIPTION OF THE VARIABLES

a. *Independent variable*: In this study the independent variable was Sensory Stimulation Program related to hearing and tactile for stroke patients.
b. *Dependent variable*: In this study the dependent variable was motor function and verbal response for patients with stroke.
c. *Extraneous variables*: In this study, it refers to the selected demographical variables like age in years, gender, marital status, role of an individual, selected risk factors for stroke.

POPULATION

The population included in this study were the patients admitted and diagnosed as stroke by the evidence certified medical physician in selected hospital, Salem during the period of the study.

SAMPLE

In this study, samples were the stroke patients undergoing treatment in Shanmuga Hospital, S.K.S Hospital, Salem during the period of the study with mild Motor function and verbal response.

CRITERIA FOR THE SAMPLE SELECTION

Inclusion Criteria

1. The patient without sedation
2. No history of previous head injury
3. Patient admitted with stroke.

Exclusion Criteria

1. Patient is declared as brain death
2. Admitted with transient ischemic attack
3. Admitted with head injury
4. Diagnosed as a cerebral aneurysm.

SAMPLING TECHNIQUE

A non-probability convenience sampling method was employed.

SAMPLE SIZE

The sample size included in this study were 15 samples in experimental group and were 15 samples in control group

DATA COLLECTION TOOL

Tool Consists of

1. Demographic data
2. A rating scale was used to assess eye opening, motor function, and verbal response in stroke patients.

Tool-1: Demographic Data:

It includes age, gender, marital status, Role of an individual, Risk factors associated with stroke. The demographic data collected through the instrument will not be scored but will be used for descriptive analysis.

Tool-2: A Rating Scale Was Used to Assess Eye Opening, Motor Function, And Verbal Response in Stroke Patients:

This section deals with rating scale which was used to assess the Motor function and verbal response based on GCS score system among samples. The score was categorized and it consists of 3 components such as eye opening, verbal response, motor response.

The Development of The Sensory Stimulation Program (SSP) To Enhance Motor Function and Verbal Response

A Sensory Stimulation Program (SSP) was developed to enhance motor function and verbal response in stroke patients. The SSP was validated by the same 5 experts who validated the tool as per the criteria, modifications were made [11].

Auditory Stimulation

Auditory stimulation is a technique in which the stimuli such as music therapy session was during morning and evening on hearing music for 7 minutes and followed by making the primary care giver to converse with the patient for 5 minutes in front of the researcher.

Tactile Stimulation

Tactile stimulation involves applying pressure to specific muscle groups in more sensitive areas, starting with the facial muscles, followed by the sternocleidomastoid, biceps, triceps, forearm muscles,

abdominal muscles, and calf muscles. Each muscle is gently grasped and held for 5 seconds. Firm pressure is generally less uncomfortable for the patient than light touch. Next, Range Of Motion passive exercise such as flexion, extension, abduction and adduction will be given and finally the researcher apply powder and provide back massage. After back massage the patient will be kept in comfortable position.

DATA COLLECTION PROCEDURE

As stated by Polit and Hungler (1999), "Data collection is the process of acquiring the information needed to solve a research problem."

The study was conducted in the ICU of a selected hospital in Salem, following approval from the relevant authorities. The study's purpose was thoroughly explained to both the patients and their families, and written consent was obtained from those who consented to participate [12].

The control group included stroke patients at the selected hospital who received standard daily nursing care from ICU nurses. On Day 1, rapport was built with the participants, and demographic information was gathered. The pre-test was also administered on the same day at the selected hospital. On 5th Day post- test was assessed the M.F and V.R among patients with stroke and scores were categorized.

Experimental group was conducted in selected hospital, On the Day1 pretest was conducted by assessing the patients Motor function and verbal response and on the same day administration of SSP to the stroke patients was started. Sensory Stimulation Program was given for a period of 26minutes by using I-pod as a music to stimuli the auditory & tactile stimulation for touch by applying the firm pressure over the more sensitivity area as followed by the back massage and range of motion exercises. The intervention was carried out for five consecutive days. The sample responses were assessed on 5th day by using the tool and the scores were categorized [13-15].

DATA ANALYSIS AND INTERPRETATION

Section -1: Distribution of Demographic Variables of The Samples

This section presents the analysis of the sample distribution based on frequency and percentage. The selected demographic variables are (1) Age in years (2) Gender (3) Marital status (4) Role of an individual (5) Selected risk factors for stroke.

The Table 2 shows that both the experimental and control groups consisted of 15 patients each. In the experimental group, 3 patients (20%) were in the 36-45 years age range, 9 patients (60%) were in the 46-55 years range, and 3 patients (20%) were in the 56-65 years range. In the control group, 1 patient (6.6%) was in the 36-45 years age range, 6 patients (40%) were in the 46-55 years range, and 8 patients (53.4%) were in the 56-65 years range. In terms of gender, the experimental group had 9 male patients (60%) and 6 female patients (40%), while the control group consisted of 10 male patients (66.7%) and 5 female patients (33.3%). All patients in both groups were married. This shows that the patients in experimental group were bread winners of the family, 9(60%) of them were bread winner's and 6(40%) of them were home maker, Control group 10(66.7%) of them were bread winner and 5(33.3%) of them were home maker's.

Table 2 Shows that in experimental group out of the 15 patients 1(6.6%) of them were of the hypertension, 5(33.3%) of them were of both a & b, and 9(60%) of them were of None. In control group out of the 15 patients, 5(33.3%) of them were of the hypertension, 3(20%) of them were of both a & b and 7(46.7%) None.

Section-2: Evaluate and Compare the Motor Function and Verbal Response Scores Between the Experimental and Control Groups in Stroke Patients

This bar chart presents an analysis of the pre-test and post-test scores for motor function and verbal response among stroke patients in both the experimental and control groups.

Figure 1 Displays the motor function and verbal response scores for the experimental group.

Figure 2 Illustrates the motor function and verbal response scores for the control group.

Table 2. The frequency and percentage distribution of patients based on demographic variables in both the experimental and control groups. (n_1=15; n_2=15).

S. N.	Demographic Variables	Experimental group		Control group	
		F	***%***	***F***	***%***
1.	Age in years				
	(a) 36-45yrs	3	20	1	6.6
	(b) 46-55yrs	9	60	6	40.0
	(c) 56-65yrs	3	20.	8	53.4
2.	Gender				
	(a) Male	9	60	10	66.7
	(b) Female	6	40	5	33.3
3.	Marital Status				
	(a) Married	15	100	15	100
4.	Role of an individual				
	(a) Bread winner	9	60	10	66.7
	(b) Home maker	6	40	5	33.3
5.	Selected Risk factors for stroke				
	(a) Hypertension	1	6.6	5	33.3
	(b) Diabetes & Hypertension	5	33.3	3	20.0
	(c) None	9	60	7	46.7

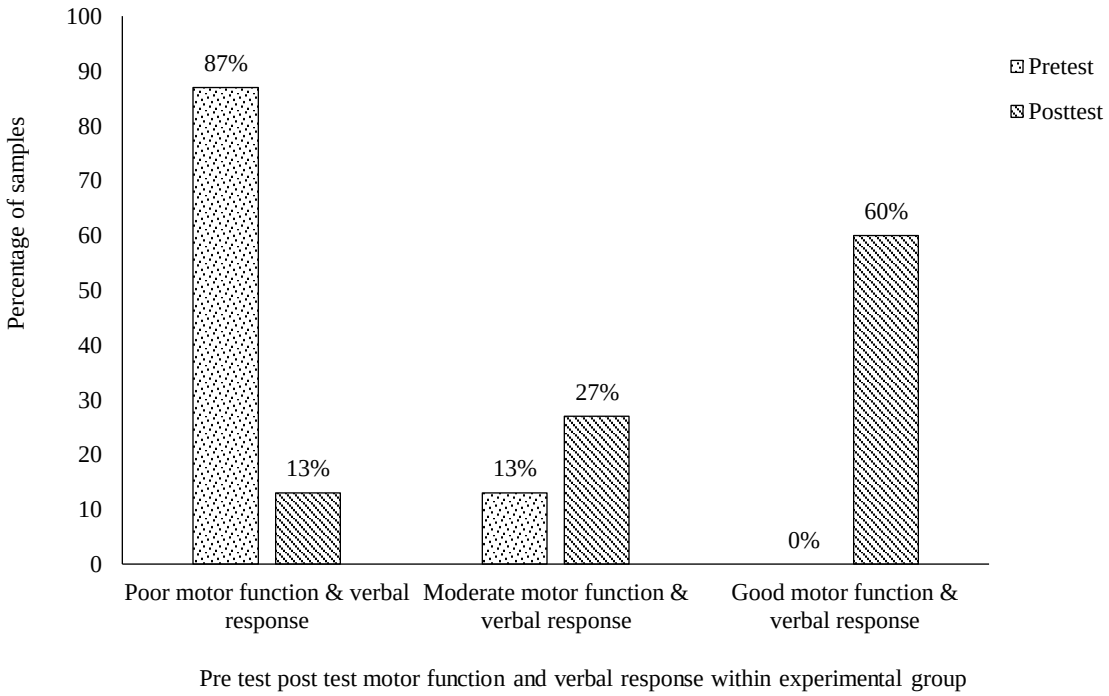

Figure 1. Bar diagram shows the percentage distribution of samples based on the level of M.F and V.R within experimental group.

Figure-1 displays the pre-test assessment of the experimental group, out of 15 patients, 13 (87%) displayed poor motor function and verbal response, while 2 (13%) had moderate motor function and verbal response. In the post-test evaluation, of the same 15 patients, 9 (60%) exhibited good motor function and verbal response, 4 (27%) showed moderate motor function and verbal response, and 2 (13%) displayed poor motor function and verbal response.

Figure-2 displays the pre-test evaluation of the control group, out of the 15 patients, 14 (93.3%) exhibited poor motor function and verbal response, while 1 (6.7%) demonstrated moderate motor function and verbal response.

In the post-test assessment, among the same 15 patients, 14 (93.3%) showed moderate motor function and verbal response, and 1 (6.7%) had poor motor function and verbal response.

Table 3. Mean, SD, Paired 't' value of pre-test & post test Score of motor function and verbal response within the Experimental and Control Group among patients with stroke. (n_1=15 n_2=15)

Group	Mean pre-test score	Mean post-test score	SD	Table value	Paired 't' value
Experimental Group	5.4	8.3	0.79	2.145	14.20*
Control Group	5.2	6.8	0.98	2.145	6.32*

** Significant at 0.05 level ; d.f.=14*

Table- 3 shows that in experimental group mean pre-test score was 5.4 & mean post-test score was 8.3 whereas the standard deviation was 0.79 and the control group mean pre-test score was 5.2 & mean post-test score was 6.8 while standard deviation was 0.98.

Statistical significance was determined by comparing the pre-test and post-test scores of motor function and verbal response within both the experimental and control groups of stroke patients. The paired 't' values were found highly significant at $p< 0.05$ level of significance. In the motor function and verbal response score calculated value was 14.20 & 6.32 and table value was 2.145.

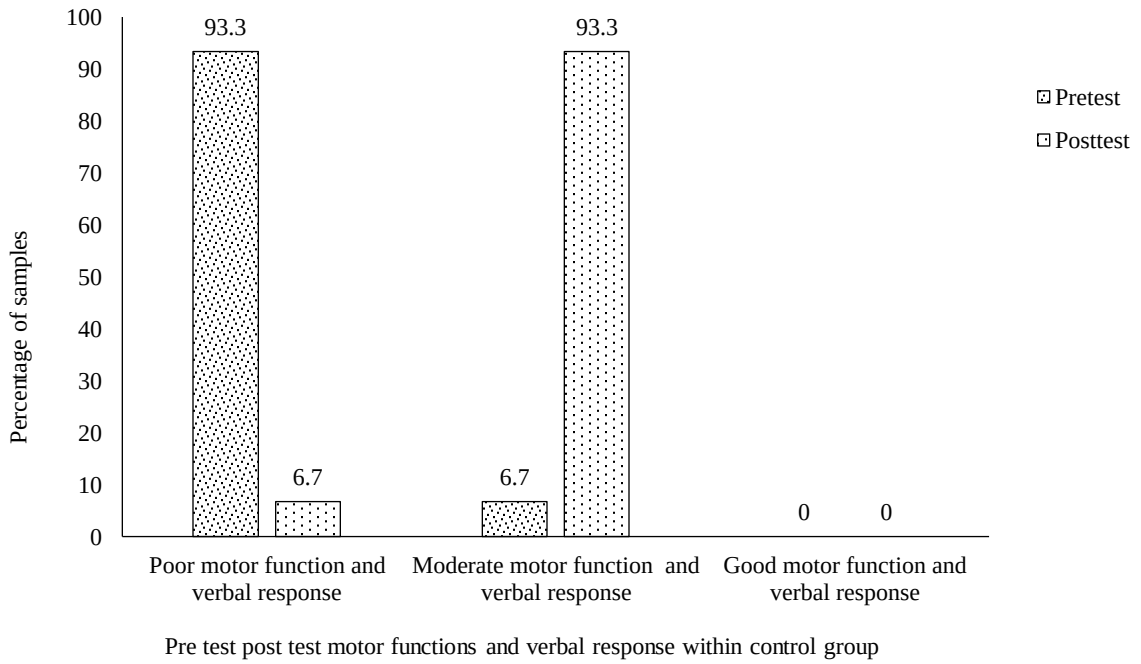

Figure 2. Bar diagram shows the percentage distribution of samples based on the level of M.F and V.R within control group.

SECTION- 3 (a): Assess and compare the score of motor function and verbal response between experimental and control group among patients with stroke.

This bar chart presents an analysis of the post-test scores for motor function and verbal response among stroke patients in both the experimental and control groups.

Figure 3 displays the percentage distribution of samples according to their levels and contrasts the post-test scores of motor function and verbal response between the experimental and control groups.

In the post-test evaluation of the experimental group, 9 out of 15 patients (60%) exhibited good motor function and verbal response, 4 (27%) showed moderate motor function and verbal response, and 2 (13%) demonstrated poor motor function and verbal response.

In the post-test assessment of the control group, 14 of the 15 patients (93.3%) demonstrated moderate motor function and verbal response, while 1 patient (6.7%) exhibited poor motor function and verbal response.

Section-3 (b): The mean and standard deviation of motor function and verbal response in stroke patients within both the experimental and control groups.

This section deals with the mean, standard deviation and unpaired 't' value of post-test score of motor function and verbal response between experimental and control group among patients with stroke.

To test this hypothesis, the unpaired t-test was used. The following table 3 shows the findings.

Research Hypothesis H_1

Patients with stroke who undergo the Sensory Stimulation Program will have significantly higher scores for motor function and verbal response compared to those who receive routine care.

Null hypothesis $H_{0(1)}$

There is no significant difference between the patients with stroke who receive the Sensory Stimulation Program and those who receive routine nursing care.

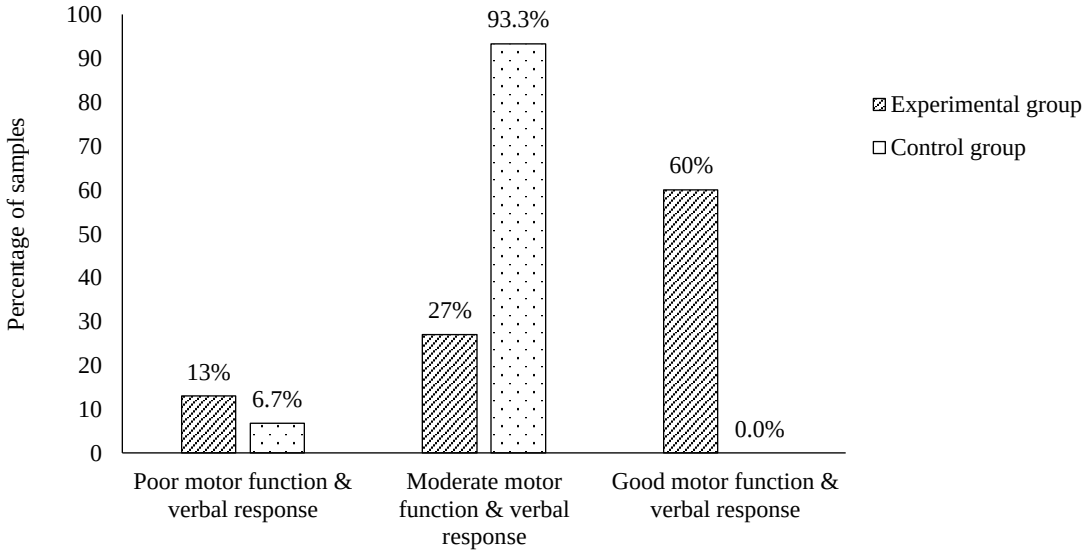

Figure 3. Bar diagram shows the percentage distribution of samples based on the level of MF and VR between experimental and control group.

Table 4. Mean and Standard deviation of Motor function score and verbal response score among samples in experimental and control group. (n_1=15; n_2=15)

Group	Post-Test		Table value	Calculated 't' value
	Mean	***Standard deviation***		
Experimental group Control group	8.36.8	1.05 0.91	2.78	4.16*

** Significant at 0.05 level; df =28*

Table 4 reveals that in experimental group the mean post-Test score was 8.3&standard deviation was 1.05 and control group mean was 6.8 while standard deviation was 0.91.

The statistical significance was assessed by comparing the post- test motor function and verbal response score between the experimental and control group among patients with stroke. The unpaired t-test results were highly significant with a p-value < 0.05. The calculated value for motor function and verbal response was 4.16, whereas the table value was 2.78.

These findings indicate that the Sensory Stimulation Program (SSP) effectively improved motor function and verbal response in stroke patients. As a result, the research hypothesis (H1) was accepted, and the null hypothesis (H0) was rejected.

Section-4: Association Between the Post-Test Score of Motor Function and Verbal Response in Experimental Group Among Patients with Stroke and Their Demographic Variables.

This section explores the relationship between the post-test scores for motor function and verbal response after the Sensory Stimulation Program in stroke patients, and their demographic variables, including age and stroke-related risk factors.

Hypothesis H2: A significant correlation is expected between the post-test scores for motor function and verbal response in stroke patients and their demographic variables (such as age and stroke risk factors). This will be further analysed in the following sections.

Section-4(a): Association between the post-test Score of motor function and verbal response on experimental group among patients with stroke and their age.

Research hypothesis $H_{2(1)}$

A significant relationship was found between the post-test scores for motor function and verbal response in stroke patients and their age.

To test the research hypothesis $H_{2(1)}$, the null hypothesis $H_{2(0)}$was formulated.

Null hypothesis $H_{2(0)}$

No significant relationship was found between the post-test scores for motor function and verbal response in stroke patients and their age.

To test the hypothesis, the researcher employed chi-square analysis. The results are presented in Table 5.

Table 5. Chi-square Analysis on experimental group among Stroke patients in Age with their selected demographic variables. (n=15).

Demographic variables	d.f	Chi-square value	Table value
Age	4	0.64(NS)	9.49

NS-Not Significant at 0.05 level

Data presented in table 5 revealed that the calculated chi-square value was 0.64 lesser than the table value 9.49 which indicate that no association between post-test score of motor function & verbal response and Age.

Hence the research hypothesis $H_{2(1)}$ was rejected and null hypothesis $H_{2(0)}$ was accepted.

Section-4(b): Association between the post-test Score of motor function and verbal response on experimental group among patients with stroke and their selected risk factors for stroke.

Research hypothesis H_2

A significant association will exist between the post-test scores of motor function and verbal response in stroke patients and the risk factors associated with stroke.

To test the research hypothesis H_2, the null hypothesis $H_{0(2)}$ was formulated.

Null hypothesis $H_{0(2)}$

No significant correlation was found between the post-test scores for motor function and verbal response in stroke patients and their selected stroke-related risk factors.

To test the hypothesis, the researcher applied chi-square analysis. The results are presented in the following Table.

Table 6. Chi-square Analysis on experimental group among patients in selected risk factors for stroke and their selected demographic variables. (n=15)

Demographic variables	Degree of freedom	Chi-square value	Table value
Selected risk factors for stroke	4	3.06(NS)	9.49

NS-Not Significant at 0.05 level

Data presented in table-6 revealed that the calculated chi-square value was 3.06 lesser than the Table value 9.49 which indicate that no association between post-test score of motor function & verbal response and Risk factors associated with stroke.

Therefore, the research hypothesis H2 was rejected, and the null hypothesis H0(2) was accepted.

IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

Implications

The results of the study have important implications for various aspects, including nursing practice, education, administration, and research.

Nursing Practice

The role of a nurse is to promote health, prevent illness, restore well-being, and alleviate suffering. He/she is not only to give care to the patient but also to update the knowledge.

Nurses play a key role in preventing complications. The findings of this study offer several important implications for nursing practice. The most important role of the nurse is to provide awareness to the primary care givers of the stroke patients regarding hearing music , passive exercise and utilize them as shadow work force in the care of patients.

Sensory Stimulation program can be helpful to have self motivation within the primary care givers. This awareness at an early stage can avoid the complications in the future. Nurse plays a great role educating the public it gives them a great opportunity to save the patient from preventable complications.

Nursing Education

The nursing curriculum should emphasize on imparting health information to the care givers and public. Nursing students can be educated on health promotions and preventions of complications among stroke patients. The nursing students should be emphasized to follow the practices in prevention of complications among stroke patients by listening music, frequent range of motion passive exercise to the impaired motor function and verbal response. Students can utilize their knowledge in both clinical and community settings.

Nursing Administration

Nursing administration plays a key role in developing policies and plans for educating both staff nurses and the public. Nursing administrators should plan and organize continuing supportive education by conducting programme to the primary care givers of stroke patients. Planning and organizing such program requires efficient team work and planning (man, money and material) a specialized inter-disciplinary team approach should work closely with the patient and their families to discuss and address their problems and give support if needed. Primary care givers of patients who had stroke should be taught about the positive way of speaking, music therapy, passive exercise and it has to be supervised while they are providing positive way of speaking, music therapy, exercise before discharge.

Nursing Research

The early teaching programme needs to be concentrated in promoting knowledge and to develop good practices in the improvement of motor function and verbal response of the stroke patients.

Research is the strong foundation of evidence based on nursing practice: hence nursing staff and student should be encouraged to conduct research. Nursing care of stroke patient and practices to improve the motor function and verbal response needs to be conducted to provide better outcome and to promote the coping of the patient.

LIMITATIONS

- The sample size was limited, which restricts the ability to generalize the findings.
- Only instrumental music was provided to the stroke patients.

RECOMMENDATIONS

1. A similar study can be conducted with a larger sample size in various settings to confirm and generalize the findings.
2. A comparable study can be carried out with patients who have head injuries.

CONCLUSION

The mean post-test motor function and verbal response in the control group of stroke patients indicated moderate levels, while the experimental group demonstrated good motor function and verbal response on their post-test assessments. This indicates that the Sensory Stimulation Program is effective in enhancing motor function and verbal response in stroke patients.

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