Research Paper

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# A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING CONSTRAINT INDUCED MOVEMENT THERAPY AMONG STAFF NURSES WORKING IN SELECTED HOSPITAL, BANGLORE.

Nursing

**KEYWORDS** : Structured Teaching Programme; Knowledge; Staff nurses; Constraint induced movement therapy and Stroke patient.

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## ABSTRACT

*Stroke is the most common life-threatening neurological disorder and the most important leading cause of disability in the world. Disability affects 75% of stroke survivors enough to decrease their employability. Constraint-induced movement therapy (CIMT) is a form of rehabilitation therapy that improves upper extremity function in stroke and other central nervous system damage victims by increasing the use of their affected upper limb. A quasi experimental study was conducted to evaluate the effectiveness of Structured Teaching Programme (STP) on knowledge regarding Constraint Induced Movement Therapy (CIMT) for stroke patient among 60 staff nurses working in selected hospitals, Bangalore. A purposive sampling technique was used to select the sample of the study. A structured knowledge questionnaire was used to collect data from the subjects. RESULTS: In the pretest, the subjects had inadequate knowledge with a mean percentage of 40.1 % and a standard deviation of 10.6% whereas in the posttest, there was a significant mean knowledge gain of 80.7 % and a standard deviation of 9.7%. In pretest, a significant association was found between age group ($\chi$ 2 = 7.08*), gender ($\chi$ 2 = 6.43*), qualification ($\chi$ 2 = 6.67*) and the mean pretest knowledge scores at 0.05 level of significance. CONCLUSION: These findings indicate that the structured teaching programme was effective in enhancing the knowledge of the staff nurses working in selected hospitals regarding Constraint induced movement therapy.*

**Introduction**

A stroke is a condition in which the brain cells suddenly die because of a lack of Oxygen. This can be caused by an obstruction in the blood flow, or the rupture of an artery that feeds the brain. The patient may suddenly lose the ability to speak, there may be memory problems, or one side of the body can become paralyzed.

**BACKGROUND AND NEED FOR THE STUDY**

Stroke is a global health problem. It is the second commonest cause of death and fourth leading cause of disability worldwide. Approximately 20 million people each year will suffer from stroke and of these 5 million will not survive. In developed countries, stroke is the first leading cause for disability, second leading cause of dementia and third leading cause of death. Stroke is also a predisposing factor for epilepsy, falls and depression in developed countries and is a leading cause of functional impairments, with 20% of survivors requiring institutional care after 3 months and 15% - 30% being permanently disabled.

Constraint-induced movement therapy (CI or CIMT) is a form of rehabilitation therapy that improves upper extremity function in stroke and other central nervous system damage victims by increasing the use of their affected upper limb. The focus of CIMT is to combine restraint of the unaffected limb and intensive use of the affected limb. Types of restraints include a sling or triangular bandage, a splint, a sling combined with a resting hand splint, a half glove, and a mitt.[5]

**CIMT mechanism**

Due to the motor deficits resulting from the stroke, the client relies on their unaffected upper extremity.

When the extremity associated with those neurons are not used

These neurons are used by the brain for other functions like development of the brain during the critical periods in infancy, toddlerhood, and childhood.

The goal is to rewire (new paths, dendrite branching) the hardwiring (synaptic intensity) of the motor and sensory centres of the brain. (Neurons that fire together, wire together)

Nurses plays important role in application of CIMT for stroke patient.

**STATEMENT OF THE PROBLEM**

**A study to evaluate the effectiveness of Structured Teaching Programme (STP) on knowledge regarding Constraint Induced Movement Therapy (CIMT) for stroke patient among staff nurses working in selected hospitals, Bangalore.**

**OBJECTIVES OF THE STUDY**

To assess the existing level of knowledge regarding constraint induced movement therapy for stroke patient among staff nurses.

To evaluate the effectiveness of structured teaching programme (STP) on knowledge regarding constraint induced movement therapy for stroke patient among staff nurses.

To determine the association between the pretest knowledge level of staff nurses regarding CIMT with their selected demographic variables.

**OPERATIONAL DEFINITION**

**Evaluate** - In this study, it refers to the method of estimating and interpreting the effectiveness of structured teaching programme on the knowledge regarding Constraint Induced Movement Therapy among staff nurses.

**Effectiveness** - In this study, it refers to the significant gain in knowledge as determined by the statistical difference between pre-test and post-test knowledge score on Constraint Induced Movement Therapy.

**Structured teaching program** – In this study, it refers to a systematically organized planned teaching material to educate regarding Constraint Induced Movement Therapy. It includes meaning, definition, indications, contraindication purposes, protocols, duration, advantages and disadvantages of CIMT.

**Knowledge** - In this study, it refers to the level of understanding of information about the Constraint Induced Movement Therapy among staff nurse which will be measured by structured knowledge questionnaire.

**Stroke patient**- In this study, it refers to patient when they will

be admitted with the diagnosis of stroke (stroke is a sudden loss of motor and sensory function resulting from disruption of blood supply to a part of the brain).

**Constraint induced movement therapy**- In this study; it refers to a form of rehabilitation therapy that improves upper extremity function in stroke and other central nervous system damage victims by increasing the use of their affected upper limb. The focus of CIMT is to combine restraint of the unaffected limb and intensive use of the affected limb.

**Staff nurse**- In this study, it refers with nursing professionals who are formally trained, registered and working in selected hospital.

**HYPOTHESIS**

**$H_1$:** The mean post-test knowledge level of staff nurse will be significantly higher than the mean pre-test knowledge level regarding Constraint induced movement therapy for stroke patient.

**$H_2$:** There will be a significant association between pretest knowledge level of staff nurses regarding Constraint induced movement therapy for stroke patient with their selected socio-demographic variables.

**DELIMITATIONS**

This study is limited to:

- Staff nurses working in general wards.
- The data collection period of 4-6 weeks.
- This study is limited to measurement of knowledge aspect only.
- The sample size is limited to 60 staff nurses.

**CONCEPTUAL FRAMEWORK**

Roy's adaptation model was used.

**Research approach**

An evaluative approach was used for this study

**Research design** The research design used in this study was Pre-experimental (one group pretest and posttest) design.

**Dependent Variable**

In this study, knowledge level of staff nurses regarding Constraint induced movement therapy is the dependent variable.

**Independent Variable**

In this study, structured teaching programme regarding Constraint induced movement therapy is the independent variable.

**Socio- demographic Variables**

Baseline characteristics such as age, gender, qualification, work experience, and previous exposure to source of information are the socio demographic variables.

**Setting of the study**

The study was conducted at V-Care Hospital (100 bedded), Chaitanya hospital (75 bedded) and Poornima hospital (50 bedded) R. T. Nagar, Bangalore.

**Population**

Target population: Staff nurses

Accessible population: Staff nurses working in selected hospitals, Bangalore.

**Sample**

In the present study, samples are the staff nurses who fulfill the inclusion criteria.

**Sample size**

Sample comprises of 60 staff nurses working in selected hospitals, Bangalore

**Sampling technique**

In this study, the purposive sampling technique was used to select the samples based on inclusion and exclusion criteria.

**Data Collection Instrument**

A structured knowledge questionnaire was used for data collection.

**The components of the instrument:**

The instrument consists of two parts.

**1: Socio Demographic Data**

The socio demographic data consisted of 5 items pertaining to age, gender, qualification, work experience, previous exposure to source of information on constraint induced movement therapy.

**Part 2: Structured knowledge questionnaire**

This part of the tool consisted of 30 items covering the content of information on stroke, stroke rehabilitation and constraint induced movement therapy. The items were **Content Validity:**

In order to ensure content validity of the data collection tool, the prepared instrument, along with the problem statement, objectives, operational definitions and criteria checklist designed for validation were submitted to 10 experts.

**Reliability of the tool:**

The reliability of the structured knowledge questionnaire was established by using split half method. The reliability quotient obtained for the tool was 0.9185.

**Pilot study**

The statistical analysis of the pilot study for the overall knowledge on Constraint induced movement therapy was the mean pretest knowledge scores was 37.8% and the same for the mean posttest knowledge score was 80.0%. From the above analysis, the structured teaching programme was found to be effective and the same was used for the main study.

**Data Collection Procedure:**

**The data was collected in the following phases:**

**Phase 1:**

In this phase, pretest was conducted on a total of 60 respondents by distributing the structured knowledge questionnaire regarding Constraint induced movement therapy and instructions were given on answering the questionnaire and doubts were clarified. Each staff took 20-30 min to answer demographic data and to fill the questionnaire.

**Phase II:**

In this phase, structured teaching programme regarding CIMT was conducted to the subjects and explained to them. All the questions or queries were clarified which were asked by the subjects.

**Phase III:**

In this phase, posttest was conducted on the seventh day after administration of the structured teaching programme.

**RESULTS**

Description of socio- demographic profile of the sample

**TABLE – 1**

Frequency and percentage distribution of demographic variables

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of staff nurses

N=60

| Characteristics | Category | Staff nurses | |
|---|---|---|---|
| | | Number | Percent |
| Age group (years) | 20-24 | 24 | 40.0 |
| | 25-29 | 25 | 41.7 |
| | 30-34 | 11 | 18.3 |
| Gender | Male | 12 | 20.0 |
| | Female | 48 | 80.0 |
| Qualification | GNM | 40 | 66.6 |
| | B.Sc. nursing | 10 | 16.6 |
| | Pc. B.Sc. | 10 | 16.6 |
| Work experience | 0-1 year | 17 | 28.4 |
| | 1-2 years | 14 | 23.3 |
| | 2-3 years | 21 | 35.0 |
| | 3 years & above | 8 | 13.3 |
| Previous exposure to source of information | No | 55 | 91.7 |
| | Yes (Mass media) | 5 | 8.3 |
| Total | | 60 | 100.0 |

**Table 2 Over all Pretest and Posttest mean Knowledge on Constraint Induced Movement Therapy**

N=60

| Aspects | Max. Score | Staff nurses knowledge | | | | Paired 't' Test |
|---|---|---|---|---|---|---|
| | | Mean | SD | Mean (%) | SD (%) | |
| Pre test | 30 | 12.03 | 3.2 | 40.1 | 10.6 | 27.35* |
| Post test | 30 | 24.20 | 2.9 | 80.7 | 9.7 | |
| Enhancement | 30 | 12.17 | 3.5 | 40.6 | 11.5 | |

*** Significant at 5% level,**
**t (0.05, 59df) = 1.96**

The above table projects the overall pretest, posttest and enhancement of mean knowledge scores regarding Constraint induced movement therapy. The mean pretest knowledge was 40.1% with SD 10.6%. The mean posttest knowledge found to be 80.7% with SD 9.7%. However, the enhancement was proved as mean (40.6%) and SD of (11.5%). Further, the paired t-test value (27.35*) shows statistical significance at level of p< 0.05 with df (59), establishing the effectiveness of STP.

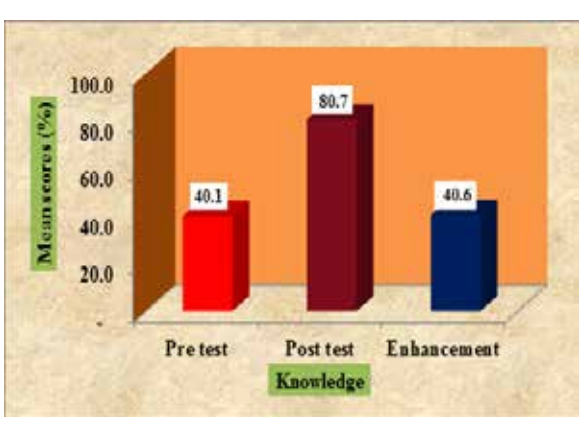


**Figure 11: Overall pretest and posttest mean knowledge scores on Constraint Induced Movement Therapy**

**Table 3 Association between socio- demographic variables and Pretest Knowledge level on Constraint induced movement Therapy**

n=60

| Demographic Variables | Category | Sample | Knowledge Level | | | | $\chi^2$ Value | P Value |
|---|---|---|---|---|---|---|---|---|
| | | | Inadequate | | Moderate | | | |
| | | | N | % | N | % | | |
| Age group (years) | 20-24 | 24 | 21 | 87.5 | 3 | 12.5 | 7.08* | P<0.05 |
| | 25-29 | 25 | 16 | 64.0 | 9 | 36.0 | | |
| | 30-34 | 11 | 5 | 45.5 | 6 | 54.5 | | |
| Gender | Male | 12 | 12 | 100.0 | 0 | 0.0 | 6.43* | P<0.05 |
| | Female | 48 | 30 | 62.5 | 18 | 37.5 | | |
| Qualification | GNM | 40 | 32 | 80.0 | 8 | 20.0 | 6.67* | P<0.05 |
| | B.Sc. nursing | 10 | 6 | 60.0 | 4 | 40.0 | | |
| | Pc B.Sc. | 10 | 4 | 40.0 | 6 | 60.0 | | |
| Work experience | 0-1 year | 17 | 12 | 70.6 | 5 | 29.4 | 1.84 NS | P>0.05 |
| | 1-2 years | 14 | 10 | 71.4 | 4 | 28.6 | | |
| | 2-3 years | 21 | 13 | 61.9 | 8 | 38.1 | | |
| | 3 years & above | 8 | 7 | 87.5 | 1 | 12.5 | | |
| Previous exposure to source of information | No | 55 | 38 | 69.1 | 17 | 30.9 | 0.26 NS | P>0.05 |
| | Yes (Mass media) | 5 | 4 | 80.0 | 1 | 20.0 | | |
| Combined | | 60 | 42 | 70.0 | 18 | 30.0 | | |

*** Significant at 5% Level,**
**NS: Non-significant**

Analysis of the existing knowledge level of staff nurses regarding Constraint induced movement therapy before administering structured teaching programme.

Majority 70% of them had inadequate knowledge (≤50%) scores, 30% of them had moderate knowledge (51-75%) scores and none of them had adequate knowledge (>75%) score in pretest regarding Constraint induced movement therapy for stroke patient among staff nurses.

Evaluation of the effectiveness of structured teaching programme on knowledge level of staff nurses regarding Constraint induced movement therapy.

In the present study, it is observed that the mean posttest knowledge score regarding general concept on stroke was 84.0% which was higher than the mean pretest knowledge score of 57.9%. Regarding stroke rehabilitation it was found that the mean posttest knowledge score was 83.9% which was higher than the mean pretest knowledge score of 40.6%. Regarding Constraint induced movement therapy it was found that the mean posttest knowledge score was 79.0% which was higher than the mean pretest knowledge score of 33.8%. Regarding all the knowledge aspects under investigation the enhancement is found to be significant (27.35*) at 0.05 level of significance.

3.To determine the association between the pretest knowledge level of staff nurses regarding CIMT with their selected demographic variables.

The Chi-square test was carried out to determine the association between the pre-test knowledge and demographic variables such as age, gender, qualification, work experience, previous exposure to information. Out of which age ($\chi^2$=7.08*) gender ($\chi^2$= 6.43*) qualification ($\chi^2$= 6.67*) were found to be significantly associated with pre-test knowledge at 5% level and the rest of the demographic variables were not significant. Hence research hypotheses $H_2$ is proved and accepted.

**Nursing Implication**

The study had several implications for nursing practice, nursing

education, nursing administration and nursing research.

**Nursing Education**
Nurse educators need to lay emphasis on definition, indications, contraindications, mechanism, advantages, disadvantages, protocols of Constraint induced movement therapy.

Nurse educators help to conduct educational programs among staff nurses regarding Constraint induced movement therapy.

Teaching strategies such as demonstration, procedure manual and computer assisted intervention can be used to train the staff nurses.

**Nursing Practice**
A regular health education program should be carried out by nurse educator regarding Constraint induced movement therapy for stroke patient.

Nurses working in hospitals should provide adequate information regarding Constraint induced movement therapy.

**Nursing Administration**
In co-operation with the hospital authorities, nurse administrator should take initiative to organize educational program for staff nurses regarding Constraint induced movement therapy.

**Nursing Research**
Nurse researcher should take efforts to conduct interactive sessions with nurses for promoting their knowledge and also to disseminate the findings of research on care of post stroke patients by providing Constraint induced movement therapy.

The nurse researcher can utilize this study in developing a model, theory, evidenced based care. Present study helps nurses and other health care personnel to understand the level of knowledge of staff nurses regarding Constraint induced movement therapy.

**Limitations of the Study**
The sample size is limited to 60 staff nurses.

Duration of data collection is limited to 4 to 6 weeks..

**Recommendations**
A similar study can be replicated on a large sample to generalize the findings.

A similar study can be conducted by including practical aspect and other settings .

A similar study can be carried out to evaluate the efficiency of various teaching strategies like planned teaching programme, pamphlets, leaflets, video assisted teaching programme and self instructional module on Constraint induced movement therapy.

A similar study can be undertaken with control group design.

A similar study can be undertaken with nursing students and other group.

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