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A Study to Assess, The Effectiveness of Structured Teaching Program on Knowledge Regarding the Impact of Thrombolysis in Stroke Patients among Staff Nurses in Selected Hospitals, Bangalore

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Abstract: ***One of the most significant causes of death among individuals is stroke. The impact of thrombolysis on stroke patients is very time-dependent. It occurs due to large-artery occlusion and has a particularly poor prognosis with higher rates of death and disability. Hence, the investigator felt the need to assess the effectiveness of a structured teaching program on knowledge regarding the impact of thrombolysis in stroke patients among staff nurses in selected hospitals, Bangalore. Through this study, the investigator also focused on imparting knowledge regarding the impact of thrombolysis in stroke patients among staff nurses and helping them to gain knowledge regarding the impact of thrombolysis in stroke patients. Methodology: In the present study, sixty staff nurses in selected hospitals, Bangalore were chosen using purposive sampling technique and the data was collected using structured knowledge questionnaire. One group pre-test pre -experimental design was adopted. The theoretical framework for the study was adopted from General System Model by Ludwig von Bertalanff. The data was analyzed using descriptive and inferential statistics. Results: Majority 86.7% of staff nurses had Inadequate knowledge and 13.3% had adequate knowledge in pre -test.The pre- test knowledge scores of participants were found to be highest in the aspect of Introduction, Definition, Risk factors, Causes, Types with mean % of 37.8 and lower in the aspect of Pathophysiology, Diagnostic measures, Clinical features Management with mean % of 29. The overall mean % of pre -test knowledge scores of participants were found to be 32.3%. Majority 61.7% of staff nurses had moderate knowledge and 38.3% had adequate knowledge in the post test. The post -test knowledge scores of participants were found to be highest in the aspect of Introduction, Definition, Risk factors, Causes, Types with mean % of 83.1 and lower in the aspect of Pathophysiology, Diagnostic measures, Clinical features Management with mean % of 55.7. The overall mean % of post -test knowledge scores of participants were found to be 72.7%. The obtained "t" value 17.86is greater than the table value 2.704 at 0.05 level of significance. Therefore, "t" value is found to be significant. It means there is gain in knowledge level of staff nurses. This supports that Structured Teaching Program on knowledge regarding Impact Of thrombolysis in stroke patients among staff nurses is effective increasing the knowledge level of staff nurses. Majority 86.7% of staff nurses had Inadequate knowledge 13.3 % had moderate knowledge and none of them had adequate knowledge in pre- test, where as in post -test 61.7% had moderate knowledge and 38.3% had adequate knowledge. The obtained χ2value is less than table value of selected demographic variable of staff nurses and was not significantly associated with post-test knowledge score of staff nurses. H2 - There will be significant association between, pretest knowledge score, on impact of thrombolysis in stroke patients among staff nurses, with selected demographic variables. The hypothesis H2 stated in the study is rejected since there is no significant association between selected demographic variables of staff nurses on knowledge regarding impact of thrombolysis in stroke patients. Findings clarify that the obtained chi square value is less than the table value at 0.05 level of significance. Conclusion: The pre-test knowledge level was deficient. The study result showed that there was increase in the knowledge level after STP on knowledge regarding impact of thrombolysis in stroke patients, among the staff nurses. The study concluded that STP was effective in increasing the knowledge regarding impact of thrombolysis in stroke patients, among the staff nurses.***

Keywords: thrombolysis, staff nurse's deficiency, staff nurses, stroke patients

1. Introduction

Stroke is a rapidly developing clinical signs of focal disturbance of cerebral function, with symptoms lasting for 24 hours or longer, according to the definition proposed by WHO health organization.4Hundreds of people suffer from brain tumors, cerebral aneurysm, epilepsy, seizures, Alzheimer's, hydrocephalus etc4 Stroke is the major global public health problem, according to global burden of disease study in 1990, there has been more than 100% increase in incidence of stroke in low- and middle-income countries from 1970-1979 to 2000-2018, and study reported nearly 5.87 million deaths globally in 2018.

In India incidence of stroke increases with age peaking in the highly productive age group of 46-65yrs, the risk of any stroke was lower in younger women as compared to men, but elderly people >65 yrs. were more prone to ischemic stroke than males.5Stroke is the leading cause of death and disability in India, the estimated adjusted prevalence rate of stroke range, 84-262/1 lakh urban areas, the incidence rate is 119-145/1 lakh based on the recent population-based studies.

One of the most significant cause of death among individuals is stroke, The impact of thrombolysis on stroke patients is very time dependent , thrombolysis also known as thrombolytic therapy , is a treatment to dissolve dangerous clots in blood vessels improves blood flow and prevents damage to the tissues and organs .thrombolysis is often an lifesaving and an emergency treatment, with the greatest benefit achieved when administered within 4.5hrs from the time of onset of the symptom's which is described as golden period , with the dose of 0.9mg/kg through intravenous , this has revolutionized the treatment of stroke in developed countries·

There was a literature gap as per the survey conducted among

hospital ward staff members using the stroke awareness questionnaire, which was adapted for use among hospital staffs to assess their knowledge of stroke symptoms and acute treatment, & hospital protocols for treatment of stroke "this study was conducted among 100 staffs out of which 81% were clinical and 19% were non clinical, only 39% were aware of thrombolysis there was lack of knowledge among staffs regarding thrombolysis, window period etc..

Based on the evidence of the theories, this study regarding impact of thrombolysis in stroke patients will contribute to the body of knowledge on skills development by surfacing and evaluating skills development strategies & approaches for staffs regarding thrombolysis, in which knowledge and skills are rapidly & constantly changing.4This will help the current shortage of research in this area and provide real world value to staffs operating in such dynamic environments.

"A retrospective study was conducted whether Intravenous thrombolytic therapy significantly improves the outcomes of acute ischemic stroke patients in a time-dependent manner. The aim of this study was to investigate whether continuous nursing quality improvement in stroke nurses has a positive effect on reducing the time to thrombolysis in acute ischemic stroke. The implementation of nursing quality improvement measures includes establishing full-time stroke nurses, pre-notification by emergency medical services (EMS), stroke team notification protocols, rapid triage, publicity and education, etc. Using a history-controlled approach, analyzed acute ischemic stroke patients with intravenous thrombolysis during a pre-intervention period (April 1, 2015-July 31, 2016), trial period (August 1, 2016-October 31, 2016), and post-intervention period (November 1, 2016-September 30, 2017).

The median time for door-to-laboratory results was decreased from 68 min to 56 min. There was no significant difference in the fatality rate, 90-day modified Ranking score, length of stay or hospitalization expenses between the three groups of patients. Implementation of nursing quality improvement measures in stroke nurses is an important factor in shortening the time of medication in patients with thrombolytic therapy, reducing the delay of intravenous thrombolysis in the hospital and helping to expedite presenting patients' arrival to the hospital post-stroke

The researcher's clinical experience found that the staff's nurses are having inadequate knowledge regarding stroke and the importance of thrombolysis in restoring their functional abilities. This motivated the researcher to select the present study and the researcher felt that improving the staff nurse's knowledge regarding thrombolysis of stroke patients.

2. Objectives of the Study

1) Assess the pretest knowledge, regarding impact of thrombolysis in stroke patients, among the staff nurses.
2) Evaluate the effectiveness of structured teaching program, on knowledge regarding, the impact of thrombolysis in stroke patients, among staff nurses by comparing, the pretest and post-test knowledge.
3) find the association between pre-post-test knowledge level, of staff nurses regarding the impact of thrombolysis, with the selected demographic variables

Hypotheses:

H_1: There will be significant difference between pretest knowledge, regarding impact of thrombolysis in stroke patients among staff nurses.

H2: There will be significant association between, pretest knowledge score, on impact of thrombolysis in stroke patients among staff nurses, with selected demographic variables.

Assumptions of the Study

- The staffs will have some knowledge regarding thrombolysis of stroke patients.
- A Structured teaching program will help to improve the knowledge of staff nurses regarding thrombolysis.

Conceptual Framework

Conceptual framework presents logically constructed concepts to provide general explanation of the relationship between the concepts of the research study, without using a single existing theory18.The present study aims at developing and evaluating structured teaching program on knowledge regarding the impact of thrombolysis in stroke patients among staff nurse**.**

3. Material and Methods

Research design is defined as a researcher's over all for obtaining answer to the research question or for testing the hypothesis. Observations are to be made and different types of statistical analysis are used to interpret the data. One group pre- test and post- test research design, which is a pre-experimental design, was selected to assess the knowledge regarding the impact of thrombolysis in stroke patients among staff nurses.

Inclusion Criteria

- Staff nurses who are willing to participate in the study.
- Staffs available at the time of data collection
- Staffs working in selected hospitals of Bangalore

Exclusion Criteria

- The staffs who were not available during the data collection
- Staffs who have recently attended seminars regarding stroke
- Staffs in psychological distress

Description of the Tool:

Section 1: Demographic Variables

Demographic variables with 8 items on age, sex, education qualification, years of clinical experience, department presently working, state belongs, previous experience with Impact Of Thrombolysis In Stroke patient, source of information. The respondents were instructed to select the most appropriate answer.

Section 2: Structured Knowledge Questionnaire

Structured knowledge questionnaire consists of 30 items about knowledge regarding assessment of impact of thrombolysis in stroke patients.

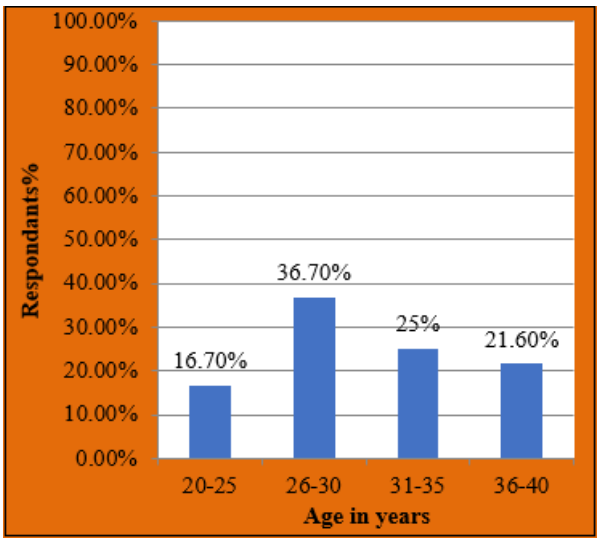
The structured knowledge questionnaire was made under the

following headings:

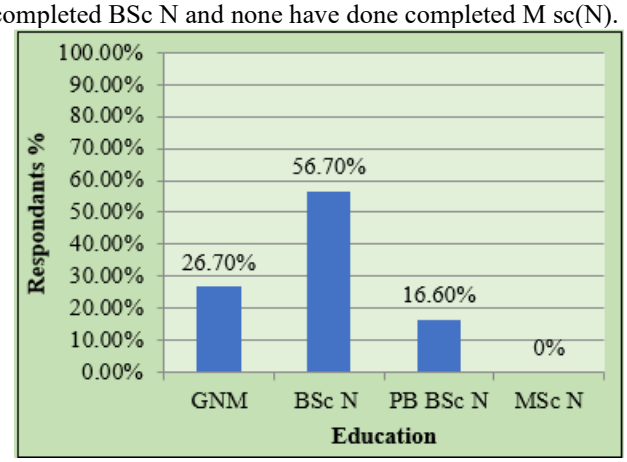
- Definition, Incidence, signs and symptoms and initial assessment of stroke
- Thrombolysis and impact of thrombolysis in stroke patients

Section–I : Demographic profile of staff nurses.
Section–II : Assessment of Pre-test and post-test knowledge of staff nurses regarding impact of thrombolysis in stroke patients
Section–III : Comparison of pre-test and post-test knowledge regarding impact of thrombolysis in stroke patients among staff nurses**.**
Section–IV : Association of the post-test knowledge scores of staff nurses with their selected demographic variables

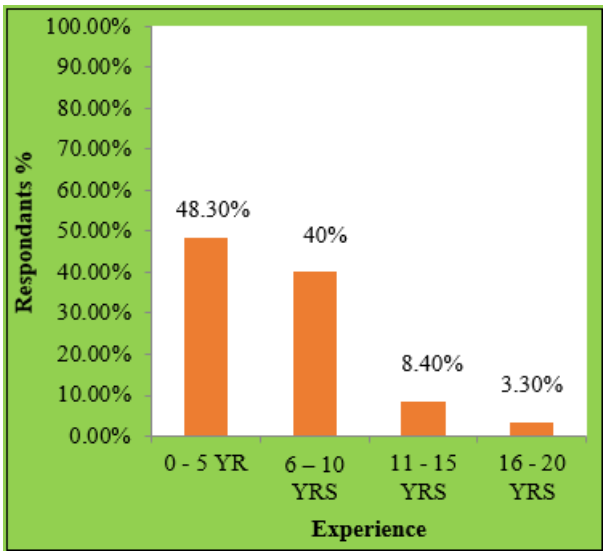
Section – I: Demographic Variable of Staff Nurses
Graph shows that majority of staff 36.7% belongs to age group belongs to 26-30 yrs. & and only 16.7% belong age group & 20 -25 Years respectively.



Distribution of staff nurses by their age
Graph shows that majority of staff nurses 56.7 % have completed BSc N and none have done completed M sc(N).



Distribution of staff nurses by their education
Graph shows that majority of staff nurses 48.3 % have 0-5 yrs of experience and only 3.3% have 16-20 years of experience.



Distribution of staff nurses by their years of experience

Table: Distribution of staff nurses by Department

S. No	Department	Frequency	Percentage
1	General ward	21	35%
2	Neuro ward	12	20%
3	Causality	13	21.7%
4	Others	14	23.3%
	TOTAL	60	100

Section II: Knowledge of Staff Nurses regarding Impact of Thrombolysis in Stroke Patients

Table Shows Pre-Test Knowledge Level of Staff Nurses, N=60

S No	Knowledge Level	Pre Test	
		Frequency	Percent
1	Inadequate knowledge	52	86.7%
2	Moderate knowledge	8	13.3%
3	Adequate knowledge	0	0%
	Total	60	100

From the above table it is evident that majority (86.7%) of staff nurses had Inadequate knowledge and 13,3% had adequate knowledge in pre test.

Table Shows Aspect Wise Mean, Mean Percentage and Standard Deviation for the Pre-Test Knowledge of Staff Nurses N=60

Sl. No.	Knowledge	No. of Items	Max Score	Mean	Mean %	SD
1	Introduction, Definition, Risk factors, Causes, Types	11	11	4.16	37.8%	2.066
2	Pathophysiology, Diagnostic measures, Clinical features Management	4	4	1.11	29%	0.932
3	Thrombolysis and its impact on stroke patients	15	15	4.4	29.3%	2.303
Overall Pre-test Knowledge		30	30	9.68	32.3%	4.092

The above table shows that the pre- test knowledge scores of participants were found to be highest in the aspect of Introduction, Definition, Risk factors, Causes, Types with mean % of 37.8 and lower in the aspect of Pathophysiology, Diagnostic measures, Clinical features

Management with mean % of 29. The overall mean % of pre -test knowledge scores of participants were found to be 32.3 %

Post Test Knowledge Level of Staff Nurses, N=60

S No	Knowledge Level	Pre Test	
		Frequency	Percent
1	Inadequate knowledge	0	0%
2	Moderate knowledge	37	61.7%
3	Adequate knowledge	23	38.3%
	Total	60	100

From the above table it is evident that majority (61.7%) of staff nurses had moderate knowledge and 38.3% had adequate knowledge in the post test.

Table Shows Aspect Wise Mean, Mean Percentage and Standard Deviation for the Post Test Knowledge of Staff Nurses, N=60

S. No.	Knowledge	No. of Items	Max Score	Mean	Mean %	SD
1	Introduction, Definition, Risk factors, Causes, Types	11	11	9.15	83.1	1.339
2	Pathophysiology, Diagnostic measures, Clinical features Management	4	4	2.23	55.7	1.006
3	Thrombolysis and its impact on stroke patients	15	15	10.45	69.6	1.829
Overall Pos-test Knowledge		30	30	21.83	72.7	3.023

The above table shows that the post-test knowledge scores of participants were found to be highest in the aspect of Introduction, Definition, Risk factors, Causes, Types with mean % of 83.1 and lower in the aspect of Pathophysiology, Diagnostic measures, Clinical features

Management with mean % of 55.7. The overall mean % of post-test knowledge scores of participants were found to be 72.7%.

Section III

Comparison of Pre-Test and Post Test Knowledge Regarding Impact of Thrombolysis in Stroke Patients among Staff Nurses, N=60

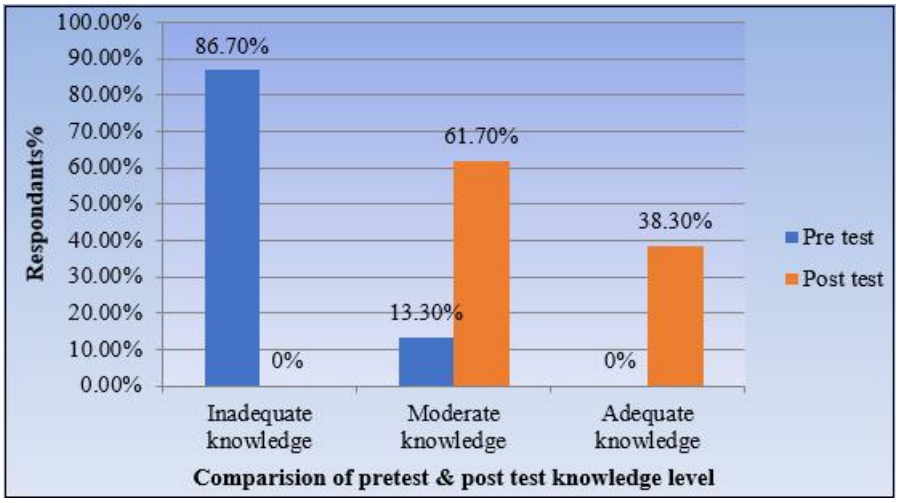
S. No.	Knowledge aspects	Pre test		Post test		Mean difference	t Value	Df	Inference
		Mean	S D	Mean	S D				
1	Introduction, Definition, Risk factors, Causes, Types	4.16	20.08	9.15	1.350	4.98	13.99	59	S
2	Pathophysiology, Diagnostic measures, Clinical features Management	1.11	0.940	2.23	1.014	1.12	6.32	59	S
3	Thrombolysis and its impact on stroke patients	4.4	2.322	10.45	1.845	6.05	16.28	59	S
	Overall Knowledge	9.68	4.092	21.8	3.023	12.15	17.86	59	S

From the above table it is evident that the obtained "t" value 17.86 is greater than the table value 2.704 at0.05 level of significance. Therefore, "t" value is found to be significant. It means there is gain in knowledge level of staff nurses. This supports that Structured Teaching Program on knowledge regarding Impact of Thrombolysis in Stroke Patients among staff Nurses is effective increasing the knowledge level of staff nurses.

Table Shows Pre-Test and Post Test Knowledge Level of Staff Nurses, N=60

S. No	Knowledge Level	Pre-Test		Post -Test	
		Frequency	Percent	Frequency	Percent
1	Inadequate knowledge	52	86.7%	0	0%
2	Moderate knowledge	8	13.3%	37	61.7%
3	Adequate knowledge	0	0%	23	38.3%
	Total	60	100	60	100

From the above table it is evident that majority (86.7%) of staff nurses had Inadequate knowledge 13.3 % had moderate knowledge and none of them had adequate knowledge in pre test, where as in post test 61.7% had moderate knowledge and 38.3% had adequate knowledge



Comparison of Pre-test and Post-test knowledge level of staff nurses

Table Shows Association of the Post Test Knowledge Scores of Staff Nurses with their Selected Demographic Variables

Variables	Below Median	Median and above	Chi square	Df	(0.05)	Inference
AGE						
20 -25 yrs	7	3				
26 – 30 yrs	12	10	5.68	3	7.81	NS
31 – 36 yrs	4	11				
36 -40 yrs	8	5				
GENDER						
Male	0	0	-	-	-	-
Female	31	29				
EDUCATION						
GNM	10	6				
BSC N	16	18	1.05	3	7.81	NS
PB BSC	5	5				
MSC N	0	0				
EXPERIENCE						
0-5 Yrs	17	12				
6-10 Yrs	10	14	2.06	2	5.99	NS
11-15 Yrs	2	3				
16-20 Yrs	2	0				
DEPARTMENT OF WORKING						
General ward	9	12				
Neuro ward	8	4	3.67	3	7.81	NS
Casuality	6	7				
Others	8	6				
STATE						
Karnataka	16	17				
Kerala	10	11	2.39	3	7.81	NS
West Bengal	2	0				
Andhra Pradesh	2	1				
PREVIOUS EXPOSURE						
No	31	28	1.09	1	3.84	NS
Yes	0	1				
SOURCE OF INFORMATION						
Hospital	16	13				
Colleagues	10	6	2.9	3	7.81	NS
Mass media	3	6				
Others	2	4				

From above table it is evident that the obtained $\chi 2$value is less than table value of selected demographic variable of staff nurses and was not significantly associated with post-test knowledge score of staff nurses.

4. Major Findings of the Study

- Majority of staff 36.7% belongs to age group belongs to 26-30 yrs & and only 16.7% belong age group & 20 -25 Years respectively.
- All of the staff nurses 100 % were females.
- Majority of staff nurses 56.7 % have completed B Sc (N) and none have done completed M sc (N).
- Majority of staff nurses 48.3 % have 0-5 yrs of experience and only 3.3% have 16-20 years of experience.
- Majority of staff nurses 35 % are in department of General

Ward and only 20 % are in Neuro ward.

- Majority of staff nurses 55 % belong to Karnataka state and 3.3% are from West Bengal.
- Majority 98.3% of staff nurses had no previous exposure and only 1.7% had been exposed towards impact of thrombolysis in stroke patients.
- Majority 48.3% of staff nurses have received information from hospital and only 10% received from other source of information regarding impact of thrombolysis in stroke patients.
- Majority 86.7% of staff nurses had Inadequate knowledge and 13.3% had adequate knowledge in pre test.
- The pre- test knowledge scores of participants were found to be highest in the aspect of Introduction, Definition, Risk factors, Causes, Types with mean % of 37.8 and lower in the aspect of Pathophysiology, Diagnostic measures, Clinical features Management with mean % of 29. The overall mean % of pre -test knowledge scores of participants were found to be 32.3 %
- Majority 61.7% of staff nurses had moderate knowledge and 38.3% had adequate knowledge in the post test.
- The post test knowledge scores of participants were found to be highest in the aspect of Introduction, Definition, Risk factors, Causes, Types with mean % of 83.1 and lower in the aspect of Pathophysiology, Diagnostic measures, Clinical features Management with mean % of 55.7. The overall mean % of post test knowledge scores of participants were found to be 72.7%.
- The obtained "t" value 17.86is greater than the table value 2.704 at 0.05 level of significance. Therefore, "t" value is found to be significant. It means there is gain in knowledge level of staff nurses. This supports that Structured Teaching Program on knowledge regarding Impact Of Thrombolysis In Stroke Patients Among Staff Nurses is effective increasing the knowledge level of staff nurses.
- Majority 86.7% of staff nurses had Inadequate knowledge 13.3 % had moderate knowledge and none of them had adequate knowledge in pre test, where as in post test 61.7% had moderate knowledge and 38.3% had adequate knowledge
- The obtained $\chi 2$value is less than table value of selected demographic variable of staff nurses and was not significantly associated with post-test knowledge score of staff nurses.
- H2 - There will be significant association between, pretest knowledge score, on impact of thrombolysis in stroke patients among staff nurses, with selected demographic variables**.** The hypothesis $\mathbf{H_2}$ stated in the study is rejected since there is no significant association between selected demographic variables of staff nurses on knowledge regarding impact of thrombolysis in stroke patients. Findings clarify that the obtained chi square value is less than the table value at 0.05 level of significance.

Acknowledgement:
"Gratitude is the attitude of mind and heart." I raise my heart in gratitude to God Almighty who has been my inspiration and guiding force behind all my efforts. I wish to express my sincere thanks to all who have helped me in accomplishing this task successfully. The present study has been completed under the inspiring guidance and supervision of my **Principal, Dr. Hemam Sangeeta Devi, Medical and Surgical Nursing, Sea College of Nursing** I express my deep sense of gratitude for her valuable suggestions, encouragement and keen interest in the planning and execution of the study. I consider it a great honor and privilege to complete this study under her supervision.

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