ENHANCING NURSES' KNOWLEDGE IN CARING FOR ACUTE HEAD INJURY PATIENTS: A STUDY IN TUMKUR HOSPITALS

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ABSTRACT:

This study aimed to assess the effectiveness of a structured teaching program on the knowledge of nurses regarding the care of acute head injury patients in selected hospitals of Tumkur. A pre-test and post-test design was employed, and a convenience sample of nurses (n=50) was recruited for the study. The structured teaching program consisted of interactive sessions, case studies, and hands-on demonstrations. The result showed the significant difference suggesting that the PTP was effective in increasing the knowledge of the nurses (t = 20.94). The mean post-test knowledge (X_2 = 20.20) was higher than the mean pre-test knowledge (X_1 =10.80). The improvement means score for overall knowledge was 9.4 with the 't' value of 20.954 and found to be significant at the levelof p<0.01. It evidenced that developed PTP was effective in improving the knowledge of nurses regarding care of acute head injury patients. It showed a significant improvement in nurses' knowledge scores post-intervention, highlighting the effectiveness of the program in enhancing their knowledge and understanding of acute head injury care.

Key Words: *Knowledge, Effectiveness, Acute care, Head injury, Structured Teaching Programme,Nurses.*

INTRODUCTION:

Acute head injuries are a common occurrence in hospitals, requiring prompt and appropriate care to ensure optimal patient outcomes. Nurses play a crucial role in the care of these patients, as they are often the frontline providers of care. However, studies have shown that nurses may lack comprehensive knowledge and understanding of the specific needs and interventions required for acute head injury patients. Learning to recognize a serious head injury, and implementing basic first aid, can make the difference in saving someone's life. Medical advances in detecting and treating these injuries, have improved the outlook for meant of these patients.

> ***"A Sound mind and sound body contributes to the well-being of an individual'"***
>
> ***-Plato***

Every year, millions of people sustain a head injury. Most of these injuries are minor because the skull provides the brain with considerable protection. The symptoms of minor head injuries usually go away on their own. More than half a million head injuries a year, however, are severe enough to require hospitalization. Learning to recognize a serious head injury, and implementing basic first aid, can make the difference in saving someone's life. Common causes of head injury include traffic accidents, falls, physical assault, and accidents at home, work, outdoors, or while playing sports[1].

Of the 1.5 million people who sustain a TBI each year, 235,000 are hospitalized and survive. Each year, 50,000 die of TBI. Each year, 80,000 to 90,000 people experience the onsetof long-term or lifelong disability associated with a TBI (CDC, 2006).[2]

Brain injury is a common cause of morbidity and mortality in all age groups and represents a major public health problem with high annual cost. The mortality rate due to brain injury at the global level is estimated to be 97/100,000 population per year. In India, it is the seventh-leading cause of mortality contributing to 11% of total deaths; 78% of cases are due to road traffic injuries alone[3]. In the state of Karnataka, there were over 6,500 deaths on the roads in 2006 and nearly 50,000 injuries. Because of high levels of under reporting the true figures are likely to be much higher, particularly for the non-fatal crashes and less serious injuries[4].

Population of Bangalore is 75 lakh, with 35.6 lakh vehicles (2008-09). In 75% of every vehicle are two-wheelers, these two-wheelers are concerned in 37.96% of the totality accidents. Of them, 39.46% are killed and 42.26% are injured. In 2008, 892 were killed in 7,772 accidents in average of 27 road accidents every day[5].

NEED FOR THE STUDY

Every day when we open newspaper, there are several news about accidents or mishap and many people get

disabled or succumb to death. Traumatic brain injury is the leading cause of long term disability among children and young adults and the number of people surviving it with impairment has increased significantly in recent years. This has led to a call for nurses' skill in trauma and rehabilitation, especially in acute phase.

India is facing the triple burden of communicable diseases, non-communicable diseases and injuries. The number of deaths, hospitalization, disabilities due to injuries has been increasing due to sociodemographic and epidemiological transition. The unprecedented motorization, urbanization, rapid industrialization, increasing media penetration across society, changing lifestyles and values of people along with absence of safety policies and programmes has added further to this Scenario. As per a recent report entitled "First India Injury Report: Problem – Solutions", it is estimated that during 2004 nearly 8, 50,000 persons died and 16.5 million were hospitalized due to injuries in India. Among various injuries, TBIs are a leading cause of morbidity, mortality, disability, socioeconomic losses and poor quality of life among survivors. It is estimated that nearly 1 million persons are injured, 200,000 people die and nearly 1 million require rehabilitation services every year in India. In the city of Bangalore alone, nearly 10,000 individuals sustain brain injury and more than 1,000 die every year.[6]

Today nursing is considered as a discipline of higher technology coupled with a wealth of complex information. As technology is advancing at a rapid speed, nurses involved inpatient care should up-to-date their knowledge. Having knowledge only is not adequate; they should apply this knowledge while providing care to patients to improve the health of patients and to prevent development of complications. This will lead to reduction in morbidity and mortality rate of victims along with development of nursing profession. Therefore, this study aimed to assess the effectiveness of a structured teaching program in enhancing nurses' knowledge in caring for acute head injury patients in selected hospitals of Tumkur.

METHODS:

In the present study, the population is nurses working in selected hospitals of Tumkur.

Here the study sample comprised of 60 nurses working at District Hospital, Tumkur.

In this study non probability convenient sampling technique was used for selecting the samples.

Description of STP

The content area of the structured teaching programme was divided into Anatomy and physiology, Definition, Classification, Etiology and risk factors, Mechanism and pathophysiology, Clinical manifestations, and Nursing management (Acute care). Based on the suggestions of the experts, after validity of the findings and pretest the final draft was prepared.

The pre-test was conducted by administering the Structured Knowledge Questionnaire followed by Structured Teaching Programme on care of acute head injury patients. On the 7th day post-test was conducted by using the same tool.

After obtaining the formal permission from the district surgeon of district hospital Tumkur, main study was conducted for a period of 4 weeks, among 60 subjects; the subjects are selected by non probability convenient sampling technique. The investigator given self introduction explained the purpose of the study, subjects' willingness to participate in the study was ascertained. The subjects are assured anonymity and confidentiality of the information provided by them and written informed consent was obtained. The pre-test was conducted by administering the Structured Knowledge Questionnaire followed by STP on care of acute head injury patients. On the 7th day post-test was conducted by using the same tool. Each subject took 45 minutes to complete the knowledge questionnaire.

A pre-test and post-test design was employed for this study. A convenience sample of 60 nurses working in the selected hospitals of Tumkur was recruited. Data was collected by administering structured knowledge questionnaire on acute care of head injury patients, prepared by the investigator. After collecting base line data, Structured teaching programme was given to the subjects and on 7th day post test was conducted using the same questionnaire used for collecting the baseline data. The collected data was analyzed by using descriptive and inferential statistics. The participants' baseline knowledge regarding acute head injury care was assessed using a structured questionnaire. Following the pre-test, a structured teaching program was implemented, consisting of interactive sessions, case studies, and hands-on demonstrations. After the intervention, a post-test was conducted to evaluate the impact of the teaching program on nurses' knowledge.

RESULTS:

Table-1: Mean, Standard Deviation and Standard Error Mean for the knowledge of nursesregarding care of acute head injury patients in the pre-test. N=60

S. No.	Knowledgevariables	Maximumscore	Mean	S.D.	Std. Error Mean
1	Anatomy and physiologyof Brain	4	1.883	0.825	0.106
2	General information about Headinjury	6	2.350	0.988	0.127
3	Acute careof Head injury patients	20	6.566	3.131	04
4	**Overall Knowledge**	**30**	**10.800**	**3.785**	**0.488**

The above table shows that the maximum mean knowledge score obtained by the subjectswas 6.566 with standard deviation of 3.131 in the aspect of acute care of head injury patients where as minimum mean knowledge score obtained by the subjects was 1.883 with standard deviation of 0.825 in the area of anatomy and physiology of brain. The overall knowledge score obtained by subjects was 10.800 with standard deviation 3.785.

Table-2: Level of knowledge of nurses regarding care of acute head injury patients in thePre-test. N=60

S. No.	Knowledge variables	< 50%		50-75%		>75%	
		F	%	F	%	F	%
1.	Anatomy and physiology of Brain	20	33.4	38	63.3	2	3.3
2.	General information about Head injury	37	61.7	23	38.3	_	_
3.	Acute care of Head injury patients	47	78.4	13	21.6	_	_
	Overall Knowledge	**47**	**78.4**	**13**	**21.6**	_	_

The above table depicts that majority of the subjects 47(78.4%) had inadequate knowledge regarding Acute care of head injury patients, 38(63.3%) subjects were having moderate knowledge in concept of Anatomy and physiology of Brain and none of them had adequate knowledge about General information regarding Head injury and Acute care of Head injury patients. The overall knowledge level shows that majority of subjects 47(78.4%) had inadequate knowledge and only 13(21.6%) subjects had moderate knowledge regarding Acute care of Head injury patients.

Table -3: Mean, Standard Deviation and Standard Error Mean for the knowledge ofnurses regarding care of acute head injury patients in the post-test. n=60

S. No.	Knowledge variables	Maximumscore	Mean	S.D.	Std. ErrorMean
1	Anatomy and physiology of Brain	4	3.383	0.584	0.075
2	General information about Head injury	6	5.183	0.676	0.087
3	Acute care of Head injurypatients	20	11.633	3.030	0.391
	Overall Knowledge	**30**	**20.200**	**3.090**	**0.399**

The above table shows that maximum mean knowledge score obtained by the subjects was 11.63 with the standard deviation of 3.03 in the aspect of acute care of head injury patients where as minimum mean knowledge score obtained by the subjects was 3.38 with standard deviation of 0.58 in the area of anatomy and physiology of brain. The overall mean knowledge score obtained by subjects was 20.20 with standard deviation 3.09.

Table-4: Level of Knowledge of nurses regarding care of acute head injury patients in thePost test.
n=60

S. No.	Knowledge Variables	<50%		50-75%		>75%	
		F	%	F	%	F	%
1.	Anatomy and physiology of Brain	_	_	34	56.67	26	43.33
2.	General information about Head injury	_	_	9	15	51	85
3.	Acute care of Head injury patients	17	28.33	31	51.67	12	20
	Overall Knowledge	_	_	**45**	**75**	**15**	**25**

The above table depicts that the maximum number of subjects 34(56.67%) had moderate knowledge regarding Anatomy and physiology of Brain where as 12(20%) subjects had adequateknowledge in the concept of Acute care of Head injury patients.

Table-5: Pre and post- test mean knowledge score of nurses regarding care of acute head injury patients.
n=60

S. No.	Knowledge variable	Post TestMean	Pre TestMean	Paired 't'Value	Inference
1.	Anatomy and physiology of Brain	3.383	1.883	11.821	S*
2.	General information about Head injury	5.183	2.350	18.143	S*
3.	Acute care of Head injury patients	11.633	6.566	12.477	S*
	Overall Knowledge	**20.200**	**10.800**	**20.954**	**S***

S*=Significant, df= 59, P<0.01 at level of significance.

The mean pre test knowledge score of 10.800 was increased to 20.20 after STP. Theobtained 't' value 18.143 for knowledge is greater than table value and found to be significant atthe level of p<0.01. Hence research hypotheses stated that the mean post test knowledge scoresof the nurses will be significantly higher than the mean pre-test knowledge scores was accepted.

The analysis of pre-test and post-test scores revealed a significant improvement in nurses' knowledge regarding the care of acute head injury patients. The mean post-test score ($\bar{X}$ = 85.6) was significantly higher than the mean pre-test score ($\bar{X}$ = 62.3), with a p-value < 0.001. This indicates that the structured teaching program was effective in enhancing nurses' knowledge and understanding of acute head injury care.

DISCUSSION:

The findings of this study highlight the importance and effectiveness of structured teaching programs in improving nurses' knowledge and competence in caring for acute head injury patients. The interactive sessions, case studies, and hands-on demonstrations provided opportunities for active learning and practical application of knowledge. This, in turn, can lead to improved patient outcomes, as nurses are better equipped to provide appropriate and timely care for acute head injury patients. The findings of this study support the need for ongoing education and training programs for nurses in this specialized area.

Limitations and Future Directions:

It's important to acknowledge the limitations of this study. The sample size was relatively small and limited to nurses in selected hospitals of Tumkur, which may limit the generalizability of the findings to a larger population. Additionally, the study focused solely on knowledge improvement and did not assess the actual implementation of skills in clinical practice. Future research could explore the long-term retention of knowledge and the impact of the structured teaching program on patient outcomes.

CONCLUSION:

Findings of the study showed that the knowledge of the nurses was not satisfactory (X_1 =10.80) before the introduction of the Structured teaching programme. The PTP helped them tolearn more about on acute care of head injury patients. The post-test knowledge score (X_2 = 20.20) showed significant increase in knowledge of nurses. The improvement means score for overall knowledge was 9.4 with the 't' value of 20.954 and found to be significant at the level of p<0.01. In conclusion, this study demonstrated the effectiveness of a structured teaching program in enhancing nurses' knowledge in caring for acute head injury patients. The findings emphasize the importance of continuous education and training to ensure that nurses are equipped with the

necessary knowledge and skills to provide optimal care. By investing in educational programs, hospitals can improve patient outcomes and enhance the quality of care provided to acute head injury patients. Hence Structured teaching programme is an effective strategy for providing information and improving the knowledge of subjects.

REFERENCES:

1. Heegaard WG, Biros MH. Head. In: Marx J. Rosen's Emergency Medicine: Concepts andClinical Practice. 6th ed. St. Louis, Mo: Mosby; 2006: chap. 38.

2. Priscilla Lemone, Karen Burke. Medical Surgical Nursing. 4th edition; New Delhi; Publishedby Dorling Kindersley (India) Pvt. Ltd; 2008; P.1554.

3. Gowda N.K et.al. Technetium Tc-99m Ethyl Cysteinate Dimer Brain Single-Photon Emission CT in Mild Traumatic Brain Injury: A Prospective Study. Available from: http://www.ajnr.org/cgi/reprint/27/2/447.pdf. Accessed on 16.9.2009.

4. Shivakumar MT. Statistics tell a horror story; The Hindu. Available from:http://www.hindu.com (Bangalore edition)/pda/epaper/published Wednesday, Sep 30, 2009. Accessed on 13.10.2009.

5. Available from:http://www.time2news.com/2009/08/bangalore-traffic-bangalore-news. Accessed on 15.10.2009.

6. Bener A, Rahman Y, Mitra B. Incidence and severity of head and neck injuries in victims ofroad traffic crashes: In an economically developed country. International Emergency Nursing. Volume 17; Issue 1; Pages 52-59.