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Original Article

A Pre-Experimental Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Trauma Care Among The Students At Selected Nursing Colleges Of District Mohali, Punjab.

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ABSTRACT

Trauma care is the organized, multidisciplinary system of interventions designed to reduce morbidity and mortality from serious injury. Trauma care is the comprehensive system of care delivered to individuals who experienced physical injuries, from the time of injury through transport, acute care, and rehabilitation. The knowledge regarding trauma care will help build the confidence and efficiency of the nursing students. This will benefit not just the students but also the patients, families and entire communities who depend on timely and skilled trauma care.

Design and methods: Quantitative approach and pre-experimental, one-group pre-test post-test design was used to carry out the study. the area selected for the study was Selected Nursing Colleges of District Mohali , Punjab. Purposive sampling technique was used to select 100 nursing students to improve the knowledge regarding trauma care through socio-demographic profile, self-administered questionnaire and structured teaching programme. Collected data was analysed by using descriptive and inferential statistics.

Result: The findings of the study show that there was significant difference between pre test and post test knowledge score of 1st year nursing students of B.Sc. And GNM , the mean comparison of pre- test and in post- test knowledge score demonstrates the effectiveness of structured teaching programme and the mean knowledge score increased from 17.88 in pre- test to 26.44 in post- test making a mean difference 8.56. The result of intervention prove that statistically significantly higher knowledge was acquired by 1st year nursing students (B.Sc. And GNM) of nursing colleges in District Mohali, Punjab regarding trauma care. The following socio-demographic variables i.e., age, gender, educational courses, location, type of family are found statistically significant.

Keywords: Structured teaching program, trauma, trauma care, knowledge

INTRODUCTION

Trauma is defined as a tissue injury that is accountable for initiating hypothalamic-pituitary-adrenal axis and immunological and metabolic responses responsible for restoring haemostasis.[1,2]According to World Health Organization, it consists of a coordinated system of pre-hospital care, acute treatment at emergency facilities, surgical and critical care interventions, and long-term rehabilitation to guarantee a continuum of care from the time of injury until achievement of their maximum level of health.[4]

In 2019, 4.4 million lives were lost due to injuries, globally. Among the people aged 5 to 29, injuries are the three of five major causes of death. The major reason of these deaths include road injury, suicides and violent crimes.[6]The World Health Organization states that injuries can either be self-inflicted or caused by road traffic events, disasters, interpersonal violence, drowning, fires, wars, poisonings, and falls [9]Trauma can lead to a variety of medical conditions such as broken bones, collapsed lung, compartment syndrome, deep cuts, flail chest, traumatic brain injuries, haemorrhage, hypovolemic shock, spinal cord injuries, traumatic abdominal injuries, amputations, and ruptured aorta.[7]

When a trauma patient arrives at the emergency department, an immediate assessment of their

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

condition is necessary. Along with gathering the history of events from the rescue team or witnesses, most patients are immediately connected to a cardiac monitor, pulse oximeter, and blood pressure monitor while taking the vital signs.

NEED OF THE STUDY:

Trauma is one of the leading causes of death and disability across the globe. The World Health Organization (WHO, 2022) reports that injuries lead to around 4.4 million deaths every year, contributing to nearly 8% of the deaths worldwide.[9] Road traffic accidents alone are responsible for over 1.3 million deaths every year and over 50 million people suffer non-fatal injuries, many of which result in long-term disability[10].Studies have shown a lack knowledge about trauma care in healthcare workers. For instance, a study among anesthesia trainees reported that only 45% demonstrated satisfactory knowledge, while more than half showed inadequate understanding of airway, breathing, circulation, and primary survey principles.[11] Similarly, a multicenter study among pediatric emergency nurses found that less than 40% could correctly apply standardized trauma triage protocols, with over half scoring below the acceptable knowledge level. [12]

During clinical postings in various hospitals, we observed that there is a lack of knowledge about trauma care in the nursing students. Most of the students are not well aware of the guidelines, protocols and essential role nurses play in the management of trauma patients. This gap in knowledge can reduce their confidence and effectiveness in handling emergencies. A Structured Teaching Programme (STP) gives a clear and organized way to improve this gap.

REVIEW OF LITERATURE:

Hassan (2024) Carried out a quasi-experimental study in Egypt with the aim of assessing the effect of a structured teaching program on emergency nursing interns. The study recruited 85 participants and applied a pre-test–post-test design to evaluate trauma knowledge and preparedness. Findings demonstrated a substantial improvement in participants' trauma knowledge, with the pre-test mean score of 42.7 (SD = 11.3) rising significantly to 78.5 (SD = 9.8) in the post-test ($t = 21.6$, $p < .001$), demonstrating the effectiveness of structured teaching interventions in strengthening clinical preparedness.[13]

OBJECTIVES:

1. To develop tool to assess the pre-test knowledge score regarding trauma care.
2. To develop and implement structured teaching programme regarding trauma care.
3. To conduct post test knowledge score regarding trauma care.
4. To assess the effectiveness of the structured teaching programme by comparing pre –test and post –test knowledge scores.
5. To determine the association between pre- test knowledge scores with selected demographic variables.
6. To disseminate the findings of the study.

HYPOTHESIS:

H0: The structured teaching programme was not effective in improving the knowledge of

+students regarding trauma care at 0.05 level of significance.

H1: The structured teaching programme was effective in improving the knowledge of students regarding trauma care at 0.05 level of significance.

There was a significant difference between pre-test and post-test mean knowledge score i.e., 8.560 regarding trauma care among the nursing students after the implementation of structured teaching programme.

Hence, the alternative hypothesis was accepted and null hypothesis was rejected.

Materials and methods:

RESEARCH APPROACH

A quantitative approach was used to evaluate the effectiveness of structured teaching programme on knowledge regarding trauma care among students at selected Nursing Colleges of District Mohali , Punjab.

RESEARCH DESIGN

The design for the present study was pre-experimental design (one group pre - test post –test design).

RESEARCH SETTING

The study was conducted at selected Nursing Colleges of District Mohali , Punjab.

TARGET POPULATION

In the present study the population consists of nursing students of selected Nursing Colleges of District Mohali , Punjab.

SAMPLE SIZE

The total sample size of the present study was 100 Nursing students of selected Nursing College of District Mohali , Punjab .

SAMPLING TECHNIQUE

Purposive sampling technique

SAMPLING CRITERIA

Inclusion criteria

- Nursing colleges of District Mohali , Punjab.
- Students of 1st year (B.Sc. Nuring and GNM)

Exclusion criteria

- Students from non – nursing courses.
- Students were not in 1st year (B.Sc. Nuring and GNM)

DESCRIPTION OF TOOL

Section A:- Socio Demographic Profile

This data sheet deals with demographic variables such as age, gender, Religion, year/semester of the study, educational course , location , type of family, occupation of father, occupation of mother , family income, and source of information.

Section B ;- Self Administered Questionnaire

The data was collected through well prepared multiple choices questionnaire. Its consists of 40 Questions and total score will be 40.

Section–C :- Structured Teaching Programme

This part consists of teaching on introduction, Definition, Golden hour, trauma care team members, triage, process of trauma care , Endotracheal intubation , tracheostomy, and nasogastric tube insertion to enhance the knowledge regarding trauma care among the students. Teaching was given with use of AV aids such as power point presentations , charts and flash cards.

PILOT STUDY:-

It was conducted on 10% of the total sample size i.e.10 samples. The pilot study was conducted at Rayat Bahra College of Nursing, Mohali .

RESULTS:-

The data was analyzed according to the plan of data analysis, which includes both descriptive and inferential statistics ,and the finding are presented below :

Figure no.1: Knowledge level of nursing students in Pre-Test

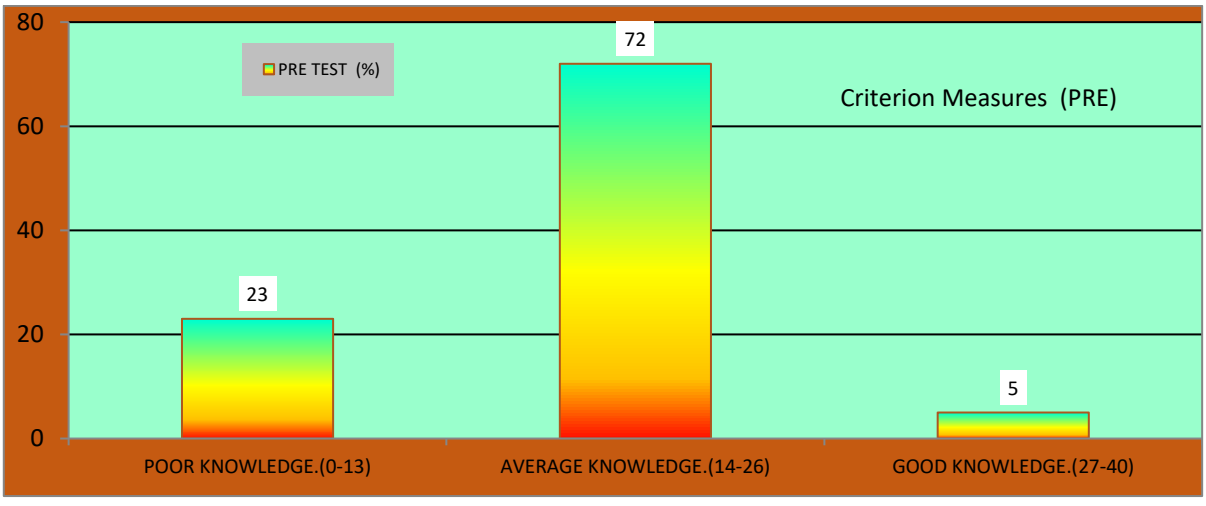

TABLE1: Knowledge Regarding Trauma Care Among Nursing Students In Pre-Test. N=100

Grading	Score (N=100)	Pre – test	
		Frequency (f)	Percentage (%)
Poor Knowledge	**0-13**	23	23%
Average Knowledge	**14-26**	**72**	**72%**
Good Knowledge	**27-40**	5	5%
Maximum=40 , Minimum=0			****Significance level =0.05**

Before administering the structure teaching programme knowledge among the nursing students regarding trauma care was assessed and the result has been in **table 1.**

The table 1 and bar graph chart in figure 1 show that 72 (72%) nursing students had average knowledge as compared to 23 (23%) who had poor knowledge and only 5(5%) had good knowledge.

Figure no. 2: Knowledge level of nursing students in Post – test

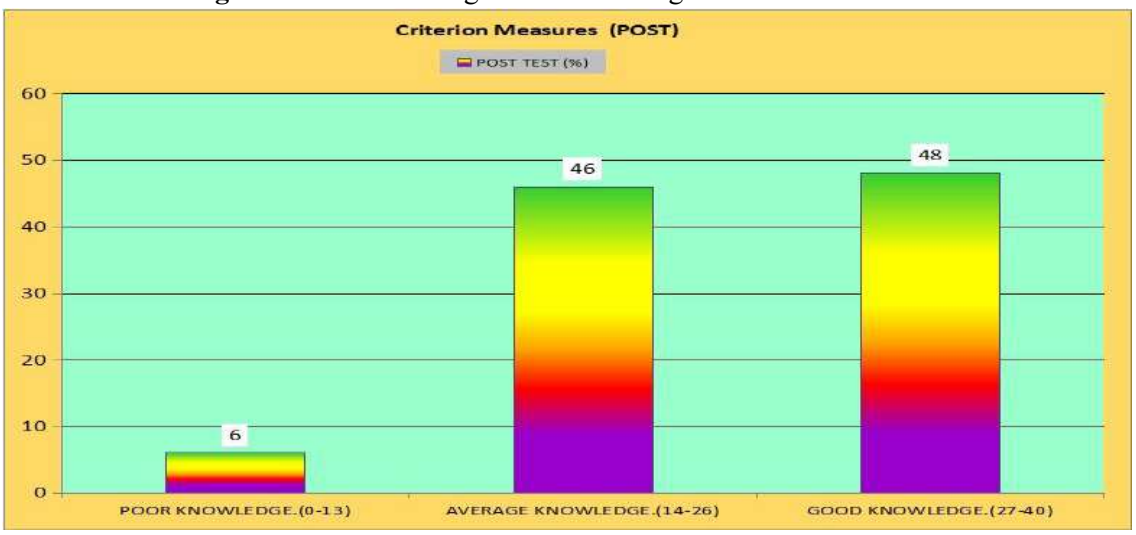

TABLE 2: Knowledge Regarding Trauma Care Among Nursing Students In Post-Test: N=100

Grading	Score (N=100)	Post – test	
		Frequency (f)	Percentage (%)
Poor Knowledge	**0-13**	6	6%
Average Knowledge	**14-26**	46	46%
Good Knowledge	**27-40**	48	48%
Maximum=40 , Minimum=0			****Significance level =0.05**

After administering the Structure teaching programme Knowledge among the Nursing students regarding trauma care was assessed and the result has been in **table 2.**

The table 2and bar graph chat in figure2 show that the post test result illustrates that 48 (48%) nursing students had good knowledge as compared to 46 (46%) who had average knowledge and only 6 (6%) had poor knowledge.

Figure no.3 Mean comparison of Pre- test and Post- test knowledge score

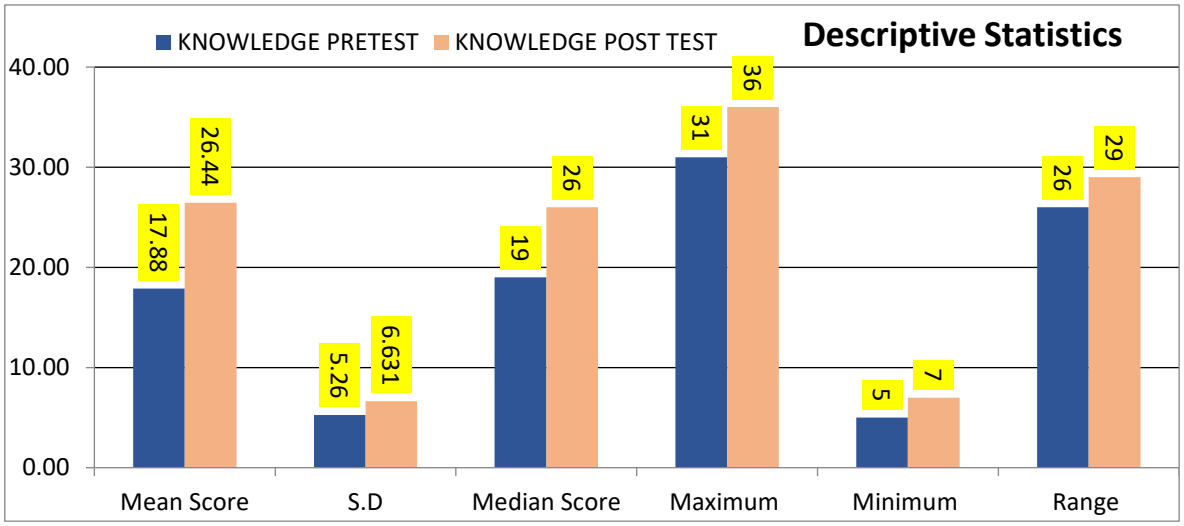

TABLE 3: Mean Comparison Of Knowledge Score In Pre-Test And Post-Test. N=100

Test	Mean	SD	Range	Mean Difference	DF	Paired "T" test	P Value	Table value at 0.05
Pre- test Knowledge	17.88	5.258	5-31	8.560	99	11.877 *sig	<0.001	1.98
Post- test Knowledge	26.44	6.631	7-36					
Maximum=40 Minimum=0						** Significance level 0.05		

The mean comparison of knowledge score in pre-test and post-test shown **in figure 3** demonstrates the effectiveness of structured teaching programme. The knowledge score increased from 17.88±5.258 in pre-test to 26.44±6.631 in post-test making a **mean difference of 8.560**. The result of intervention proved that statistically significantly higher knowledge (8.560-1.98, p= .001) (p<0.001) was acquired by the students at selected nursing colleges of District Mohali, Punjab regarding trauma care as shown in figure.3.

Table 4: Association Of Knowledge With Age, Gender, Educational Course, Domicile ,Type Of Family N=100

Variables	Options	Good knowledge	Average knowledge	Poor knowledge	Chi test	P value	DF	Table value	Results
Age in years	17-19 years	2	44	7	33.007	0.000	6	12.592	Significant
	19-21years	0	24	10					
	21-23 years	3	3	2					
	23 or above	0	1	4					
Gender	Male	2	10	12	14.746	0.001	2	5.991	Significant
	Female	3	62	11					
Educational course	GNM	1	27	17	10.668	0.005	2	5.991	Significant
	B.Sc.Nursing	4	45	6					
Domicile	Urban	1	43	7	8.007	0.018	2	5.991	Significant
	Rural	4	29	16					
Type of family	Nuclear	3	55	10	8.831	0.012	2	5.991	Significant
	Joint	2	17	13					
Maximum=40;Minimum=0									**Significance level =0.05

Table 4 depicts the association between selected demographic variables and pre-test knowledge scores. A statistically significant association was observed between age and knowledge level (chi test = 33.007, $p < 0.05$), with the highest score in the 17–19 years age group (44), followed by 19–21 years (24), 21–23 years (3), and ≥23 years (1). Gender also showed significant association (chi test = 14.746, $p < 0.05$), with females (62) scoring higher than males (10). Educational qualification was significantly associated (chi test = 10.668, $p < 0.05$), as B.Sc. Nursing students (45) had higher scores than GNM students (27). Similarly, domicile (chi test = 8.007, $p < 0.05$) revealed higher scores among urban students (43) compared to rural students (29), and family type (chi test = 8.831, $p < 0.05$) showed higher scores among students from nuclear families (55) than joint families (17).The variables were significantly associated at the 0.05 level of significance.

DISCUSSION

The findings of the study had been discussed in accordance with the objective of the study. The findings of the present study revealed that overall pre-test knowledge score (17.88) of students regarding knowledge of trauma care. The nursing students in pre-test knowledge score had majority of students 72% in Average knowledge score, 23% in Poor knowledge score and 5% in Good knowledge score .These findings of the present study were similar to the previous study to improve the knowledge regarding trauma care through education intervention.

The findings of the present study revealed that in post-test knowledge score had majority of students 48% in good knowledge score, 46% in average knowledge score and 6% in poor knowledge score. Which is higher than pre-test knowledge score These findings reveal that there is a substantial increase in the knowledge after the implementation of structured teaching programme.

The present study revealed that overall post-test mean score (26.44) of students knowledge was higher than the pre-test knowledge score (17.88).The results of post-test knowledge score making a mean difference of 8.560. These findings support other studies conducted by **Karaca et al. (2023),** Conducted a study in simulation-based trauma training among nursing students. The study aim was to assess the knowledge regarding management in trauma care. A pre-experimental study in one group and pre-test and post-test design was adopted. Data was collected from 52 students. The pre-test knowledge score reveals that 10.25% had inadequate knowledge and post-test knowledge score reveals that 17.04% had moderate knowledge. The survey used conclude that majority of the nursing students had adequate knowledge regarding simulation-based trauma training. The result of the study revealed that post-test knowledge score 17.04% were higher than pre-test knowledge score 10.25%. These findings reveal that there is a substantial increase in the knowledge after the implementation of the simulation based learning programme.

The findings of the present study revealed that age, gender, educational courses, domicile, type of family are found statistically significant.

CONCLUSION

The conclusion were drawn on the basis of findings of the study. The findings showed that post-test knowledge score was greater than the pre-test knowledge score regarding effectiveness of the knowledge on trauma care. It revealed that structured teaching programme was effective. Our findings highlight the knowledge regarding trauma care. The study focuses on students at nursing colleges. It evaluates the impact of a structured teaching programme on knowledge regarding trauma care. These results have implications for nursing education and practice, highlighting the importance of structured educational interventions in enhancing knowledge and skills in trauma care. The study's findings can inform the development of similar programs in other nursing colleges, ultimately contributing to improved patient care and outcomes.

REFERENCES

1. Dumovich J, Singh P. Physiology, Trauma. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538478/
2. National Health Mission. Management of Injuries: Standard Treatment Guidelines [Internet]. New Delhi: Ministry of Health and Family Welfare, Government of India; 2014. Available from: https://nhm.gov.in/images/pdf/guidelines/nrhm-guidelines/stg/management-of-injuries.pdf
3. World Health Organization. Injuries — Western Pacific [Internet]. Manila: WHO Regional Office for the Western Pacific; Available from: https://www.who.int/westernpacific/health-topics/injuries
4. Bonnie RJ, Fulco CE, Liverman CT, editors. Reducing the Burden of Injury: Advancing Prevention and Treatment [Internet]. Washington (DC): National Academies Press (US); 1999. Available from: https://www.ncbi.nlm.nih.gov/books/NBK230595/
5. Hi Tech Hospital. What is Trauma Care? A Complete Guide for Patients and Families [Internet]. Bhubaneswar: Hi Tech Hospital; Available from: https://www.hi-techhospital.in/blogs/what-is-trauma-care-a-complete-guide-for-patients-and-families/
6. World Health Organization, Regional Office for South East Asia. Strengthening Injury Prevention and Trauma Care [Internet]. New Delhi: WHO SEARO; Available from: https://www.who.int/southeastasia/activities/strengthening-injury-prevention-and-trauma-care

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