

A Study to Assess the Effectiveness of Structured Teaching Programme on Prevention and Post-Exposure Prophylaxis of Needle Stick Injury among Student of B.Sc. Nursing 3 Yr in Regency Institute of Nursing Kanpur

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ABSTRACT

Background: A needle stick injury is the penetration of the skin by a hypodermic needle or other sharp object that has been in contact with blood, tissue or other body fluids before the exposure. Even though the acute physiological effects of a needle stick injury are generally negligible, these injuries can lead to transmission of blood-borne diseases, placing those exposed at increased risk of infection from disease-causing pathogens, such as the hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). In healthcare and laboratory settings globally, there are over 25 distinct types of blood-borne diseases that can potentially be transmitted through needle stick injuries to workers. In addition to needle stick injuries, transmission of these viruses can also occur as a result of contamination of the mucous membranes, such as those of the eyes, with blood or body fluids, but needle stick injuries make up more than 80% of all percutaneous exposure incidents in the United States. Various other occupations are also at increased risk of needle stick injury, including law enforcement, laborers, tattoo artists, food preparers, and agricultural workers.

- Objectives:** To assess the pre-test knowledge of student nurses regarding Prevention and Post exposure prophylaxis of needle stick injury.
- To assess the post-test knowledge of student nurses regarding prevention and post exposure prophylaxis of needle stick injury.
- To find out the association between the Pre-Test Knowledge Score of student nurses on prevention and post exposure prophylaxis of needle stick injury with Selected Demographic Variables.
- To evaluate the effectiveness of structured teaching program by comparing pre-test and post-test knowledge score of student nurses on prevention and post exposure prophylaxis of needle stick injury.

Material and Method Quasi-experimental design one group pre and post-test design was selected to evaluate the effectiveness of Structured Teaching Programme on knowledge regarding Prevention and post-exposure of NSI among nursing student at selected nursing colleges, Kanpur.

Result: The mean pre-test knowledge score was 13.84, which increased to 23.4 in the post-test. The calculated t-value of 23.4 was significantly higher than the table value at the 0.05 level of significance, indicating that the educational intervention was highly effective in improving the knowledge of participants.

KEYWORDS: Needle stick injury, Nursing students, Structure Teaching Programme.

INTRODUCTION

Needle stick injuries (NSIs) represent a major occupational hazard in healthcare settings, particularly for nursing students who are transitioning

from theoretical education to practical clinical training. According to the World Health Organization, over 3 million healthcare workers

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worldwide are exposed to bloodborne pathogens through percutaneous injuries annually, with NSIs making up a significant proportion of these exposures. It is estimated that 37.6% of hepatitis B, 39% of hepatitis C, and 4.4% of HIV infections among healthcare professionals result from such injuries. In India, the incidence of NSIs among healthcare workers ranges between 24% and 64% per year.¹ Nursing students are particularly vulnerable due to their limited experience and increased exposure during clinical postings. A multicenter study across Indian nursing institutions reported that approximately 54% of nursing students had experienced at least one NSI during their training, though many cases go unreported.² The risk of NSIs is heightened among students due to several contributing factors. Inexperienced students frequently perform invasive procedures under supervision, but unfamiliarity with clinical tools, anxiety about performance, and the pressure to acquire new competencies make them more prone to accidental injuries. Studies reveal that up to 70% of these injuries occur while administering injections or recapping needles—both preventable through proper technique and adherence to safety protocols. Beyond physical harm, NSIs also have psychological consequences. Many affected students suffer from fear, anxiety, and depression following an incident, which can hamper academic progress and clinical confidence. The stigma around reporting these injuries further compounds the issue, as students may avoid disclosing incidents due to fear of criticism, thereby missing the opportunity for timely intervention and post-exposure prophylaxis (PEP).³

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Frequency And Percentage Distribution of the Pre Test and Post Test Level of Knowledge Score Among Nursing Students at Selected Nursing College. n=50

LEVEL OF KNOWLEDGE	PRE-TEST		POST-TEST	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Inadequate	24	48%	0	0%
Moderate	21	42%	10	20%
Adequate	5	10%	40	80%
TOTAL	50	100%	50	100%

- To evaluate the effectiveness of structured teaching program by comparing pre-test and post-test knowledge score of student nurses on prevention and post exposure prophylaxis of needle stick injury.

METHODOLOGY:

A quantitative research approach was adopted for the present to evaluate the effectiveness of Structured Teaching Programme on knowledge regarding Prevention and post-exposure of NSI among nursing student at selected nursing colleges, Kanpur

Research variables

Independent variables

Structured Teaching Programme to improve Nursing Students knowledge regarding Prevention and post-exposure of NSI was the independent variable in this study

Dependent variables

Knowledge of Students regarding Prevention and post-exposure of NSI was the dependent variables in the study.

Inclusion criteria

- Nursing students available at the time of data collection.
- Nursing students who are willing to be a part of the study

Exclusion criteria

- Who are ill
- Who refused to take part in the study
- Who are under went same type of intervention

Development and description of the tools

Demographic variable

Age, gender, religion, class and course, family types, Knowledge, do you know about needle stick injury, source of information.

Structured knowledge questionnaire

Knowledge questionnaire consist of 30 question related to needle stick injury.

The score is further divided as follows-

Inadequate knowledge-(0-10)

Moderate knowledge - (11-20)

Adequate knowledge -(21-30)

RESULT

From the above data analysis, it was found that after giving educational intervention to 50 samples (Nursing students), most of them adequate 40(80%) had adequate knowledge, 10(20%) had moderate knowledge no one had inadequate knowledge and in pre-test 24(48%) had inadequate knowledge, 21(42%) had moderate knowledge and 5(10%) of Nursing students had adequate knowledge and no one needed improvement after giving self-Structured Teaching programme. It was inferred that, most Nursing student had adequate knowledge in post-test.

EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION AND POST EXPOSURE OF NSI AMONG THE NURSING STUDENTS

Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention and Post-Exposure Prophylaxis of Needle Stick Injury Among the Nursing Students at Selected Nursing College

Intervention	Calculated Paired "T" Value	Df	Table Value (At 0.05)	Significance
Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention and Post-Exposure Prophylaxis of Needle Stick Injury	12.80	49	2.01	Significant

ASSOCIATION BETWEEN POST TEST KNOWLEDGE SCORE WITH SELECTED DEMOGRAPHIC VARIABLES OF NURSING STUDENTS

Association Between Pre Test Knowledge Score with Selected Demographic Variables

Demographical Variables	Response	KNOWLEDGE SCORE			Chi Square X2	Significant/ Non-Significant
		Inadequate knowledge	Moderate knowledge	Adequate knowledge		
Age	17-19	13	11	0	X ² = 5.14 df=6	Non-significant
	20-22	11	8	5		
	23-24	0	2	0		
	Above 24	0	0	0		
Gender	Male	4	5	0	X ² = 0.70 df=2	Non-significant
	Female	20	16	5		
	Other	0	0	0		
Religion	Hindu	24	19	4	X ² = 12.42 df=6	Non-significant
	Muslim	0	0	1		
	Christian	0	2	0		
	Any other	0	0	0		
Family Type	1. Nuclear family	18	16	3	X ² = 6.80 df=8	Non-significant
	2. Single parent family	4	1	0		
	3. Extended family	1	0	0		
	4. Step family	0	0	0		
	5. Grandpa- rent family	1	4	2		
Previous knowledge	Yes	14	16	5	X ² = 2.58 df=2	Non-significant
	No	10	5	0		
If yes, source of information	1. Conference	3	7	0	X ² = 3.42 df=6	Non-significant
	2. Skilled training Program.	0	0	0		
	3. CNE/CME	0	0	0		
	4. Other	21	14	5		

LIMITATION

1. The study was confined to only 50 Nursing students.
2. The study was limited to one group pre-test and post-test.

RECOMMENDATIONS

1. A similar study can be carried out on a large sample for broader generalization.
2. A pre-experimental study can be conducted among high school students by giving a self-instructional module

CONCLUSION

It can be concluded that Structured Teaching Programme on knowledge regarding Prevention and post-exposure of NSI among nursing student at selected nursing colleges.

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