Research Paper

A Descriptive Study to Assess the Knowledge Regarding Needle Stick Injury Among Nursing Students

Prabhjeet Kaur[1], Ekjot Kaur[2], Kawaljit Kaur[3]

[1]Assistant Professor, Institute of Nursing, University Regional Centre, Goindwal Sahib.
[2]Nursing Tutor, Institute of Nursing, University Regional Centre, Goindwal Sahib.
[3]Assistant Professor, Institute of Nursing, University Regional Centre, Goindwal Sahib.

Corresponding Author: Prabhjeet Kaur

ABSTRACT

Introduction: Nurses often confront a multitude of challenges during their shifts, with Needle stick Injuries (NSIs) being among them. Remarkably, despite experiencing NSIs while on duty, some nurses opt not to disclose these incidents to management or relevant departments. Factors contributing to the underreporting of NSIs in the workplace comprise apprehension of reprisal, time constraints, insufficiency in post-exposure protocols and reporting procedures and misunderstanding regarding the severity of exposure risks to blood borne pathogens.

Aim: The aim of the study was to assess the knowledge regarding needle stick injury among nursing students.

Material and Methods: The present study employed a descriptive non-experimental research design to investigate the subject matter. A non-probability convenience sampling technique was utilized to select a sample of 100 nursing students. The data was collected using by demographic proforma and self-structured knowledge questionnaire.

Results: The study revealed that revealed that 76% of respondents had an average level of knowledge, 14% had below average, and 10% had a good level of knowledge. The mean knowledge score was 11.70 ± 2.79. Statistical analysis showed no significant association between the level of knowledge and demographic variables such as age (p = 0.885), course of study (p = 0.737), knowledge about needle stick injury (p = 0.371), type of residence (p = 0.627), source of information (p = 0.268), and experience of needle stick injury (p = 0.695).

Conclusion: This study highlights the need for improved needle stick injury awareness among nursing students in Tarn Taran. The identified knowledge gaps call for targeted educational interventions and rigorous training programs. Enhancing students' knowledge and skills is essential for their safety and the quality of patient care, ultimately fostering a safer healthcare environment and reducing the risks associated with needle stick injuries.

Keywords: Knowledge, needle stick injury, nursing students.

INTRODUCTION

In the realm of healthcare, it is imperative for professionals to remain vigilant regarding various workplace occurrences. According to the Centers for Disease Control and Prevention (CDC), a sharps injury is delineated as a puncture wound

caused by implements such as needles, scalpels, or similar sharp items, potentially leading to contact with blood or bodily fluids.[1]

A significant portion of health care workers are impacted by Needle stick Injuries (NSIs), with these incidents constituting a considerable proportion of the 385,000 sharps-related injuries experienced by hospital-based personnel annually.[2]

In 2021, recent statistics revealed a surge in sharps injuries to nearly 400,000 annually (Brenner, 2021), with a notable portion of cases likely going unreported. Predominantly, NSIs are reported by nurses, surgeons and emergency personnel. According to CDC data, over half of those affected by sharps injuries are nurses, whereas only 25% of cases involve non-healthcare workers.[3]

RESEARCH STATEMENT:
A descriptive study to assess the knowledge regarding needle stick injury among nursing students in selected institutes of district Tarn Taran.

AIM OF THE STUDY: The aim of the study was to assess the knowledge regarding needle stick injury among nursing students.

OBJECTIVES
1. To assess the knowledge regarding needle stick injury among nursing students.
2. To find out association between level of knowledge and their selected demographic variables

MATERIALS & METHODS
RESEARCH APPROACH: quantitative approach was adopted to assess the knowledge regarding needle stick injury among nursing students.

RESEARCH DESIGN: quantitative non experimental descriptive design was used to assess the knowledge regarding needle stick injury among nursing students.

RESEARCH VARIABLE: knowledge regarding needle stick injury among nursing students.

RESEARCH SETTING: the study was conducted at Institute of Nursing University Regional Centre Shri Goindwal Sahib, district Tarn Taran.

TARGET POPULATION: This study was conducted among nursing students in selected institute of district Tarn Taran.

SAMPLE SIZE AND SAMPLING TECHNIQUE: Convenient sampling technique was used to collect the sample of 100 nursing students in selected institute of district Tarn Taran

INCLUSION CRITERIA:
- Nursing students who were willing to participate in the study.
- Nursing students available at the time of data collection.

EXCLUSION CRITERIA:
- Nursing students who were not willing to participate in the study.

DEVELOPMENT AND DESCRIPTION OF TOOL: The tool consists of 2 parts: -
Part A: Socio-demographic Profile
This consist of 6 number of items for obtaining personal information about subjects such as are age, course, type of residence, any previous knowledge regarding needle stick injury, source of information and experience related to needle stick injury.

Part B: Self-structured knowledge questionnaire regarding needle stick injury.
It consists of 24 multiple choice questions format which assess the knowledge regarding needle stick injury among nursing students. Each correct response carries 1 mark and each incorrect response carries 0 mark.

Minimum possible score: 0 and Maximum possible score: 24

S. No.	Criterion	Score
1.	Good	17-24
2.	Average	9-16
3.	Poor	1-8

CONTENT VALIDITY OF TOOL: The content validity of tool is determined by nursing faculties of 31 different subjects in college. As per guidance, suggestions and discussion with guide and co-guide amendment were made in the final tool.

DATA COLLECTION PROCEDURE: The data collection for the study was carried out in the month of February 2024, before commencing the task of data collection, formal permission was obtained from the Principal of Institute of Nursing University Regional Centre Shri Goindwal Sahib district Tarn Taran, Punjab.

ANALYSIS AND INTERPRETATION
In descriptive analysis frequency, percent, mean, standard deviation, median and inter-quartile range were calculated. In inferential statistics, chi-square test was applied. The IBM SPSS version 27 was used for data analysis and interpretation of data.

ORGANIZATION AND PRESENTATION OF DATA
The data was organized and presented in tabulation and graphical manners according to the following sections.

Section I: Finding related to the Socio-demographic Profile of nursing students in selected colleges of district Tarn Taran.

Table 1: Socio-demographic Profile of Nursing Students N=100

S. No.	Variable	Frequency (f)	Percentage (%)
1.	**Age in years**		
	19	48	48
	20	40	40
	21	12	12
	Mean SD	19.73±1.29	
2.	**Course**		
	G.N.M	40	40
	B.Sc. Nursing	60	60
3.	**Do you have knowledge regarding needle stick injury**		
	Yes	19	19
	No	81	81
4.	**Type of residence**		
	Rural	67	67
	Urban	33	33
5.	**Source of information**		
	Friends	05	05
	Teachers	80	80
	Social media	05	05
	Health Personnel	10	10
6.	**Have you ever experienced needle stick injury**		
	Yes	14	14
	No	86	86

Table 1 presents the socio-demographic profile of nursing students. A total of 100 participants were included in the study. The majority of participants were evenly distributed across three age groups: 48% were aged 19, 40% were aged 20 and 12% were aged 21. 40% of the participants were enrolled in the General Nursing and Midwifery (GNM) program, while the remaining 60% were pursuing a Bachelor of Science in Nursing (B.Sc. Nursing) degree. A notable proportion of participants (81%) reported not having prior knowledge, whereas only 19% claimed to possess

knowledge about needle stick injuries. Most participants (67%) belonged to rural areas, followed by 33% to urban areas. Regarding the source of information, the most common source cited was teachers (80%), followed by health personnel (10%), friends (5%) and social media (5%). A significant proportion of participants (86%) reported never having experienced such an incident, while 14% admitted to having encountered needle stick injuries at some point.

Section II: Finding related to assess the knowledge regarding needle stick injury among nursing students.

Table 2: Level of Knowledge Regarding needle stick injury among nursing students. N=100

S. No.	Level of Knowledge	Frequency (f)	Percentage (%)
1.	Good	10	10.0
2.	Average	76	76.0
3.	Below Average	14	14.0

Table 2 illustrate the level of knowledge regarding needle stick injury among nursing students, with 100 participants included. The majority of respondents (76%) were categorized as having an average level of knowledge, while 14% were classified as below average. Only 10% demonstrated a good level of knowledge regarding needle stick injuries.

Table 3: Descriptive Statistics of Knowledge Score Regarding needle stick injury among nursing students. N=100

Mean	SD	Md	IQR	Min.	Max.	Range
11.70	2.79	11	4	7	18	4
NB: SD=Standard deviation, Md=Median, IQR= Inter quartal range, Min= Minimum, Max=Maximum						

Table 3 show descriptive statistics of nursing students' knowledge scores regarding needle stick injury. The mean knowledge score was 11.70±2.79. The median knowledge score was 11(4). The minimum knowledge score recorded was 7, while the maximum score was 18, resulting in a range of 4.

Section III: Finding related to find out association between level of knowledge and their selected demographic variables.

Table 4: Association between knowledge regarding needle stick injury of nursing students with demographic variables. N=100

S. No.	Variables	Level of knowledge			χ^2	df	p value
		Good	Average	Below Average			
1.	**Age in years**						
	18-19	4	38	6	1.457	4	0.885[NS]
	20-21	5	28	7			
	>21	1	10	1			
2.	**Course**						
	G.N.M	5	29	6	0.572	2	0.737[NS]
	B.Sc. Nursing	5	47	8			
3.	**Do you have knowledge regarding needle stick injury**						
	Yes	3	15	1	2.092	2	0.371[NS]
	No	7	61	13			
4.	**Type of residence**						
	Rural	7	49	11	1.108	2	0.627[NS]
	Urban	3	27	3			
5.	**Source of information**						
	Friends	1	4	0	6.220	6	0.268[NS]

	Teachers	7	63	10			
	Social media	0	3	2			
	Health Personnel	2	6	2			
6.	**Experienced needle stick injury**						
	No	8	65	13	0.860	2	0.695[NS]
	Yes	2	11	1			

Table 5 presents the association between knowledge regarding needle stick injury among nursing students and various demographic variables. Chi-square test was applied to examine the associations, with a significance level set at 0.05. The results indicate that age (p = 0.885), course of study (p = 0.737), knowledge about needle stick injury (p = 0.371), type of residence (p = 0.627), source of information (p = 0.268) and experience of needle stick injury (p = 0.695), none of the 41 demographic variables showed a statistically significant association with the level of knowledge regarding needle stick injury among nursing students

DISCUSSION
The current study reveals that the majority of respondents 76% exhibited an average level of knowledge, with 14% falling below average and only 10% demonstrating a good understanding of needle stick injuries. The mean knowledge score was calculated at 11.70±2.79. This finding mirrors that of Ali AS et al. (2023), where 76.19% demonstrated knowledge of post-exposure prophylaxis, suggesting the need for enhanced healthcare safety practices.[4] Additionally, Baig FJ et al. (2023) reported a high understanding of needle stick injuries among participants, with 97% displaying comprehension.[5]

The findings of the present study suggest that various demographic variables, including age, course of study, knowledge about needle stick injury, type of residence, source of information and experience of needle stick injury did not show a statistically significant association with the level of knowledge regarding needle stick injury, as all p-values exceeded 0.05. This indicates that demographic characteristics did not significantly influence the level of

knowledge among the participants. Roozbeh J et al. (2023) highlighted significant associations between older age (p = 0.033), over 10 years of work experience (p = 0.040) and earlier graduation (p = 0.031) with higher needle stick injury prevalence.[6] Similarly, Saleh AM et al. (2023) observed significant distinctions between students from different years of study (p < 0.05), suggesting that educational progression may impact needle stick injury awareness.[7]

CONCLUSION
this study underscores the imperative of enhancing needle stick injury awareness among nursing students in Tarn Taran. The findings reveal gaps in knowledge that necessitate targeted educational interventions and rigorous training programs. Addressing these deficiencies is crucial not only for the safety and well-being of the students themselves but also for the quality of patient care they provide. By equipping nursing students with comprehensive knowledge and practical skills to prevent and manage needle stick injuries, we can promote a safer healthcare environment and mitigate the risks associated with this occupational hazard.

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