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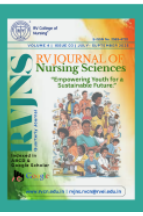

"A Study to Assess The level of knowledge Regarding Needle Stick Injuries among BSc Nursing Students in Selected Nursing Institute, Bangalore"

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ABSTRACT

Needle stick injuries (NSI's) pose a significant occupational hazard among nursing students, increasing the risk of bloodborne infections such as Hepatitis B, Hepatitis C, and HIV. This descriptive study assesses the level of knowledge regarding NSI's among B.Sc. nursing students at a selected nursing institute in Bengaluru. A structured knowledge questionnaire was administered to 45 students using a non-probability convenience sampling technique. Findings revealed that 15.5% of students had poor knowledge, 57.8% had average knowledge, and 26.7% demonstrated excellent understanding of NSIs and their prevention. The study shows association between knowledge on NSI prevention and four demographic variables. The study highlights the need for enhanced educational interventions and training programs to improve awareness and adherence to standard safety precautions. Strengthening institutional policies and reinforcing safe needle-handling practices can mitigate risks and promote a safer learning environment for nursing students.

Introduction

Needle stick injuries (NSIs) are a significant occupational hazard for healthcare workers, including nursing students, who frequently handle sharp instruments during their clinical training. These injuries expose individuals to potentially life-threatening blood borne infections such as Hepatitis B, Hepatitis C, and HIV, leading to serious health consequences. While various preventive measures and safety protocols have been established, the occurrence of NSIs remains high, often due to a lack of awareness, inadequate training, and improper handling or disposal of needles.

Nursing students, being in their learning phase, are particularly vulnerable as they may lack the necessary knowledge, Skills, and confidence to follow safety protocols effectively. Additionally, institutional factors such as insufficient training on post-exposure prophylaxis (PEP) and underreporting of incidents further exacerbate the risk. Given the crucial role that nurses play in patient care, ensuring their safety and preparedness is essential for both their well-being and the quality of healthcare delivery.

This study seeks to answer the following research question: What is the level of knowledge regarding needle stick injuries among B.Sc. nursing students in a selected nursing institute in Bengaluru. Understanding the awareness and preparedness of nursing students Regarding NSI's is essential in identifying knowledge gaps and areas requiring improvement. The study hypothesizes that a significant deficiency exists in their understanding of NSI prevention and management. By assessing their knowledge, this research aims to emphasize the importance of structured training programs, institutional safety policies, and the promotion of best practices in clinical settings. Strengthening these areas can help mitigate the risks associated with NSIs, foster a culture of safety among nursing students, and ultimately contribute to reducing the incidence of occupational injuries in the healthcare sector.

Need for the Study

Needle stick injuries (NSIs) pose a significant occupational hazard for healthcare professionals, particularly nursing students who are in the early stages of their clinical training. Exposure to contaminated needles increases the risk of transmitting bloodborne pathogens such as Hepatitis B, Hepatitis C, and HIV. Despite established preventive guidelines, inadequate knowledge and improper handling of sharp instruments continue to contribute to the prevalence of NSI.

This study is essential to assess the level of awareness among BSc Nursing students regarding NSI and their prevention. Understanding the gaps in knowledge will help in developing targeted educational interventions and reinforcing best practices. Additionally, examining the association between demographic factors and NSI awareness can provide valuable insights into specific groups that may require additional training. By identifying these gaps, nursing institutions can enhance their curriculum and training programs, ensuring that future healthcare professionals are well-equipped to minimize the risks associated with needle stick injuries.

Objectives

1. To evaluate the extent of knowledge regarding needle stick injuries among BSc Nursing students.
2. To examine the association between knowledge of needle stick injury prevention and selected demographic variables among BSc Nursing students.

Materials and Methods

Procedure of data collection: Informed consent was obtained from the samples. 45 samples were selected by using non-probability convenience sampling technique. Data was collected by administering personal proforma and structured knowledge questionnaires regarding needle stick injury.

Students took 20 min to fill the questions. Data collection process was terminated by thanking the samples.

Research approach and design: Descriptive research design

Setting: RV College of Nursing, Bangalore.

Sample: 4thYear B.sc Nursing students

Sample size: The sample size consists of 45 nursing students.

Sampling technique: Non-probability Convenience Sampling technique.

Inclusion Criteria: Nursing Students who are:

1) Available at the time of data collection.
2) Willing to participate.

Variables:

Research Variable: Knowledge regarding needle stick injuries among B.sc nursing institute, Bangalore.

Demographic Variable: In this study it refers to age, gender, religion, parents working in the health care sector.

Tools for Data Collection:

Section 1: Personal proforma to assess the personal variables such as age, gender, religion, class and year, parents working in the health sector.

Section 2: Structured knowledge questionnaire to assess the level of knowledge regarding needle stick injury.

Scoring:

CATEGORY	SCORE
Poor Knowledge	0-10
Average Knowledge	11-15
Excellent Knowledge	16-20

Results and Interpretation

Table 1.1Frequency and percentage distribution of selected socio-demographic variables of B.Sc. Nursing students

n= 45

SL.no	Personal variable	Frequency	Percentage %
1	Age (in years)		
	21	10	22.23%
	22	24	53.33%
	23	9	20%
	24	1	2.22%
	25	1	2.22%
2	Gender		
	Male	17	37.7%
	Female	28	62.3%
3	Religion		
	Hindu	24	53.3%
	Muslim	09	20%
	Christian	12	26.7%
4	Parents working in health sector		
	Yes	06	13.3%
	No	39	86.7%
5	History of illness		
	Yes	06	13.3%
	No	39	86.7%
6	Previous knowledge regarding needle stick injury		
	Yes	40	88.8%
	No	5	11.2%

The above table shows majority that is 24(53.33%) respondents belong to 22 years, 10(22.23%) respondents belong to 21year,9(20%) belong to 23 years, 1(2.22%) belong to 24years, 1(2.22%) belong to 25 years.Most of the respondents were females 28(62.3%) and male were 17(37.7%).24(53.3%) were Hindu, 9(20%) were Muslims, 12(26.7%) were belong to Christians. 6(13.3%) parents are working in health care sector, 39(86.7%) are not working in health care sector.6(13.2%) respondents have history of illness, 39(86.7%) have no any history of illness.40(88.8%) has previous knowledge regarding needle stick injury, 5(11.25%) has no previous knowledge regarding needle stick injury.

Table 2. Frequency and percentage distribution of knowledge score regarding Needle Stick Injury among 4th year BSc Nursing students n= 45

SL.NO	Levelofknowledge	Frequency	Percentage (%)
1	Poor	7	15.5%
2	Average	26	57.8%
3	Excellent	12	26.7%

The above Table depicts that the majority of the students have 26(57.85%) had average knowledge, about 12(26.7%) had excellent knowledge, and 7(15.5%) nursing students had poor knowledge regarding needle stick injury.

Table 3. Mean, standard deviation and mean percentage of knowledge scores regarding needle stick injury

n= 45

Sl.no	Knowledge aspects	No. of items	Max. Score	Mean	SD	Mean (%)
1	General Information	20	20	13.8	11.88	69%

Table 4. Association between knowledge level score of 4th year B.Sc. nursing students regarding needle stick injury with selected demographic variable. n= 45

Sl. No	Demographic Variables	Chi-Square	DF	P Value	Inference
1.	Age (in years) 21 22 23 24 25	39.33	4	0.00	Significant
2.	Gender Male Female	2.69	1	0.10	Not Significant
3.	Religion Hindu Muslim Christian	8.4	2	0.015	Not Significant
4.	Parents working in health sector Yes No	24.2	1	0.00	Significant
5.	History of illness Yes No	24.2	1	0.00	Significant
6.	Previous knowledge regarding needle stick injury Yes No	78.04	1	0.00	Significant

The result shows association between knowledge regarding needle stick injury with age, parents working in health sector, history of illness and previous knowledge regarding needle stick injury

Discussion

The primary purpose of this study was to assess the level of knowledge regarding needle stick injuries (NSIs) among B.Sc. nursing students in a selected nursing institute in Bengaluru. Given the occupational hazards associated with NSIs, particularly the risk of transmitting bloodborne infections such as Hepatitis B, Hepatitis C, and HIV, evaluating nursing students' awareness and preparedness iscrucial. The findings revealed that while a majority of students had an average understanding of NSIs (57.8%), a significant percentage (15.5%) had poor knowledge, indicating gaps in awareness and training. Only 26.7% of students demonstrated excellent knowledge, highlighting the need for enhanced education and intervention strategies. These results suggest that although nursing students are exposed to NSI-related information during their training, additional efforts are needed to reinforce knowledge and promote best practices in clinical settings.

The findings align with previous research studies that emphasize the prevalence of NSIs among healthcare workers and the lack of adequate knowledge among students. Studies by Veronesi et al. (2018) and Zhang et al. (2008) similarly reported that nursing students often lack a comprehensive understanding of NSI prevention and management. The underreporting of NSIs, as highlighted by Rais and Jamil (2013), may also be a contributing factor to inadequate knowledge, as students may not fully grasp the importance of immediate reporting and post-exposure prophylaxis (PEP). The present study underscores the importance of structured training programs, frequent safety drills, and institutional policies that encourage safe needle handling and injury reporting. By integrating these elements into the nursing curriculum, institutions can better equip students to handle NSIs confidently and minimize occupational risks.

Conclusion

In conclusion, this study highlights the need for improved education and training regarding needle stick injuries among nursing students. The results indicate that while a moderate level of knowledge exists, significant gaps remain that must be addressed through targeted interventions. Strengthening institutional policies, reinforcing safety protocols, and promoting a culture of reporting and prevention can contribute to reducing the incidence of NSIs. Ensuring that nursing students are well-equipped with knowledge and practical skills will not only enhance their safety but also improve overall patient care and infection control measures in healthcare settings.

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