

A STUDY TO ASSESS THE KNOWLEDGE REGARDING NEEDLE STICK INJURIES AS AN OCCUPATIONAL HAZARDS AMONG STUDENT NURSES IN SELECTED NURSING COLLEGES AT DISTRICT RATNAGIRI WITH VIEW TO DEVELOP A PAMPHLET ON NEEDLE STICKS INJURY

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ABSTRACT

Needlestick injuries are a common occupational hazard among healthcare workers, particularly nurses and student nurses who are frequently exposed to needles and other sharp instruments. Adequate knowledge regarding the hazards, prevention, and management of needlestick injuries is essential to minimize occupational risks. The present study was conducted to assess the knowledge regarding needlestick injuries as an occupational hazard among student nurses, with a view to developing a pamphlet. A non-experimental descriptive research design was adopted for the study. A stratified sampling technique was used to select third-year B.Sc. Nursing and third-year RGNM students. Data were collected using a structured knowledge questionnaire related to needlestick injuries as an occupational hazard. The findings revealed a mean knowledge score of 15.93 ± 1.29 , with a median score of 16 and a mean percentage score of 53.34%, indicating moderate knowledge among the student nurses. No significant association was found between knowledge scores and selected demographic variables such as gender, nursing course/stream, and source of information. The findings indicate a need to strengthen students' knowledge regarding prevention, immediate management, reporting, and infection-control measures related to needlestick injuries. Regular education and training on standard precautions, safe handling and disposal of needles, and avoidance of needle recapping are essential. The pamphlet developed by the researcher may serve as a useful educational resource to improve knowledge and promote safe practices among student nurses.

KEYWORDS: Needle Stick Injury, Occupational Hazard, Knowledge, Student Nurses, Nursing Students, Prevention, Infection Control, District Ratnagiri, Pamphlet

1. INTRODUCTION

Needle stick injuries are a frequent occurrence among healthcare Nurses.¹ Needle stick injury is a result of an accident with a needle. Needle stick injury means a physical wound caused by needles, scalpel, scissors, when skin is accidentally punctured. These injuries can occur at any time, when people use, disassemble or dispose of needles.² The risk of accidental needle stick injuries is great during invasive procedures such as collection of blood and giving injections.³

As nurses are the largest work force of the health care industry and at high risk to incur needle stick injuries, it is important to have adequate knowledge about hazards, prevalence and controlling measures of needle stick injury.⁴

The most effective means of preventing the transmission of blood borne pathogens is to prevent exposure to needle stick injuries. The primary prevention of needle stick injuries is achieved through the elimination of unnecessary injections and needles. The implementation of education, universal precautions, elimination of needle recapping and use of sharp containers have reduced needle stick injuries by 80%.⁵

While needle stick injuries have the potential of transferring bacteria, protozoa, viruses and prions, from a practical point the transmission of the hepatitis B and hepatitis C viruses and the Human Immunodeficiency Virus (HIV) is important. The specific risk of a single injury depends on a number of factors when the patients harbor the virus of concern. Injuries with a hollow-bore needle, deep penetration, visible blood on the needle, a needle that was located in a deep artery or vein, or with blood from terminally ill patients are known to increase the risk for HIV infection.⁶

Need For Study:

According to WHO Bulletin 2003, 30% to 50% of all needle injuries occur during clinical procedures.⁴ The Centre's for Disease Control (CDC), 2007 estimates that about 6,00,000 to 10,00,000 needle stick injuries occur each year. Unfortunately, about half of these needle stick injuries go unreported.⁵

The American Nurses Association (ANA), 2007 estimates that of the numerous needles stick injuries only about 1,000 healthcare workers actually contract an infection. Besides exposure to blood borne pathogens, the nurse is also at risk for about 20 other infections apart from blood borne pathogens, which can be transmitted through a needle stick, including tuberculosis, syphilis and malaria. When a nurse is exposed to a needle stick, the risk of transmitting various types of blood borne pathogens (HIV, Hepatitis B or Hepatitis C) from an infected patient to a health care worker is greatly increased.¹ The Indian Journal of Medical ethics reported that the total number of needle stick injuries that an average nurse in India experiences is likely to be higher on account of absence of training and protective devices, thus increasing the total exposure to possibly infected blood or body fluids.²

The researcher identified that there were many needle stick injuries among student nurses, in which some were not reported. This is because of inadequate knowledge on practice regarding handling and disposal of needles. Despite the growing body of knowledge concerning needle stick injury, there has been little research focusing on needle stick injury in the student population. So, the researcher felt the need of conducting research on knowledge regarding needle stick injuries. among student nurses with a view to develop a protocol on the prevention of needle stick injuries.

While needle stick injuries have the potential of transferring bacteria, protozoa, viruses and prions, from a practical point the transmission of the hepatitis B and hepatitis C viruses and the Human Immunodeficiency Virus (HIV) is important. The specific risk of a single injury depends on a number of factors when the patients harbor the virus of concern. Injuries with a hollow-bore needle, deep penetration, visible blood on the needle, a needle that was located in a deep artery or vein, or with blood from terminally ill patients are known to increase the risk for HIV infection.¹

Objectives:

- To assess the knowledge among student nurses regarding needle stick injury as an occupational hazard.
- To find out the association between knowledge regarding needle stick injury with selected demographic variables among student nurses.
- To develop & provide pamphlet on needle sticks injury.

Hypothesis:

H0- There will be no significant level of knowledge on needle stick injuries as an occupational hazard among student nurses.

Methodology:

Research approach- A non- experimental approach.

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Research Design- A non- experimental descriptive research design will be used.

Variables:

Dependent variables- Knowledge of student nurses regarding needle sticks injury.

Demographic variables-

1. Gender
2. Stream of nursing course.
3. Source of information.

Setting of the study:

The study subject selected colleges at District Ratnagiri

Sample: Student studying at selected nursing college at District Ratnagiri

Sampling techniques: Stratified sampling is used I this study.

Criteria for selection of sample:

Inclusion Criteria:

3rd year Basic B. Sc. Nursing & 3rd year RGNM student of selected nursing college at District Ratnagiri

Student who are willing to participate in the study.

Exclusion Criteria:

Student who are not available during study.

Description of tools:

The tools consist of self-administered structured questionnaire. It is divided into 2 parts, they are follows,

Part-1: Selected demographic variables such as gender, stream of nursing course, source of information.

Part- 2: Knowledge questionnaire regarding needle stick injuries as an occupational hazard among student nurses.

Scoring of the items:

For knowledge items each correct answer was given a score “ONE” and wrong answer “ZERO”.

Methods of data analysis:

The investigator uses descriptive and inferential statistical technique.

Descriptive statistics-

Frequency and percentage will be used to analyze demographic data.

Percentage distribution, mean % and standard deviation will be used to analyze knowledge.

The analyzed data will be presented in the form of tables, graphs and diagrams.

Inferential statistics-

Chi square(X²) test will be used to find the association between the selected demographic variables and knowledge score of students.

Result:

This chapter deals with analysis and interpretation of data to assess the knowledge regarding needle stick injury as an occupational hazard among student nurses. A sample of 30 student nurses. The data collected were organized,

tabulated, analyzed and interpreted by using the descriptive and inferential statistic and descriptive with the help of table and figures.

Presentation of data:

Table no. 1: Description of demographic variables of the student nurses.

Table no. 2: Classification of respondent based on the level of knowledge.

Table no. 3: Mean, SD, range and mean percentage of respondent of needle stick injury.

Table no. 4: Association between the levels of knowledge with demographic variables.

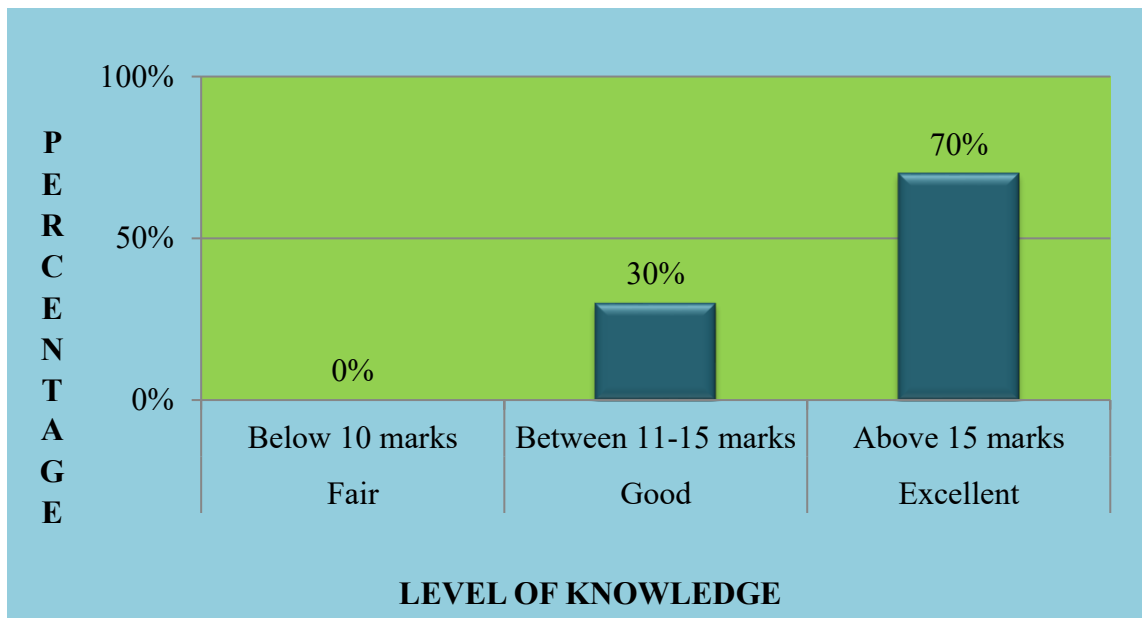
Table No. 1. Frequency and percentage distribution of samples according to demographic variables. N= 30

Sr. no.	Demographic variables	Frequency	Percentage
1	Gender		
	Male	06	20
	Female	24	80
2	Stream of nursing course		
	B.B.Sc. Nursing	15	50
	RGNM nursing	15	50
3	Source of information		
	News paper	00	00
	Booklets	13	43.35
	Internet	17	56.67

Table No. 1 It shows that among the selected students nurses highest percentage (80%) of student's nurses were belonged to the female students and (20%) are male students nurses. Shows the stream of course were B.B.Sc.[50%] nursing were as RGNM [50%] nursing students and also explains the source of information of the selected students nurse's percentage (56.67%) were belongs to internet of more than booklets (43.33%) none of the respondents to newspaper.

Table No. 2 Classification of respondents based on level of knowledge. N= 30

Knowledge level	Category	Classification of respondents	
		Number	Percent
Fair	Below 10 marks	0	00
Good	Between 11-15 marks	9	30
Excellent	Above 15 marks	21	70



Graph No. 4, Percentage distribution of respondents according to pre-test knowledge score on needle sticks injury as an occupational hazard.

Above table no. 2 and graph no. 4, reveals about the classification of students nurses according to knowledge level categorized as fair (below 10 marks), good (11-15 marks) and excellent (above 15 marks). The table shows that out of 30 students in per test 00(0%) students had fair knowledge, 9(30%) students had good knowledge and 21(70%) students had excellent knowledge.

Table No. 3 Mean, SD, range and mean percentage knowledge of respondents on needle sticks injury as an occupational hazard. N= 30

Aspects	Max score	Knowledge of respondent				
		Range	Mean	SD	Median	Mean (%)
Knowledge on needle stick injury	19	13-19	15.93	1.29	16	53.34

*Significant at $P < 0.05$ level

Table no. 3 shows that knowledge regarding needle sticks injury. The mean knowledge with SD 15.93 ± 1.29 . The range was 13-19; the median was 16. The mean percentage of knowledge scores was 53.34%. It includes that student nurses had good awareness regarding needle sticks injury.

Table 4 Association between the level of knowledge with demographic variables. N=30

Sr. no.	Demographic Variables	Frequency	knowledge level		Chi square
			<median n 16	$\geq$ median 16	
1	Sex				1.39, df=1, $p < 0.05$, Ns
	a. Male	6	4	2	
	b. Female	24	5	19	
2	Stream of nursing course				1.012, df=1, $p < 0.05$, Ns
	a. B.B.Sc. Nursing	15	7	8	
	b. RGNM nursing	15	2	13	

3	Source of information				0.145,df=2,p<0.05,N s
	a. News paper	0	0	0	
	b. Booklets	13	5	8	
	c. Internet	17	4	13	

Table no. 4 shows that the data was presented in table shows that, association between knowledge and demographic variables sex, stream of nursing course, source of information of needle stick injury were found to no significant association with knowledge score.

Recommendation:

- A similar study can replicate on a sample with different demographic characteristics.
- A similar study may be replicated with a control group.
- A descriptive study can do to assess the needle stick injury among student nurses.

Conclusion:

The study shows, the overall knowledge of respondents based on level of knowledge categorised as Fair (below 10 score), Good (11-15 score) and excellent (above 15 score) The table shows that out of 30 students 00 (00%) students had fair knowledge and 9(30%) students had good knowledge and 21(70%) students had excellent knowledge.

So researcher came to the conclusion that, Overall knowledge about needle stick injury as an occupational hazard among student's nurses is excellent and there was no significant association between knowledge and selected demographic variables

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