

A Study to Assess the Knowledge Regarding Needle Stick Injury and its Universal Precaution among the BSc Nursing Students in Selected College, Kolkata with a View to Prepare Information Booklet

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Abstract: ***Introduction:** Needle stick injury is recognized as an occupational health hazard among millions of workers. Nurses at high risk of needle stick injury from syringes and intravenous (IV) equipment relative to other health care workers. Universal precautions are designed to prevent infection from inoculation, contact with mucous membrane, such as mouth or eye or through skin damages such cuts. The main principles of universal precautions are washing hands, care of intact skin, protection of damage skin, proper handling and disposal of sharp objects, good hygiene practices and careful handling of blood and body fluids. **Title of the study:** A Study to Assess the Knowledge Regarding Needle Stick Injury and Its Universal Precaution among the BSc Nursing Students in Selected College, Kolkata with a View to Prepare Information Booklet. **Objectives:** To assess the level of knowledge on needle stick injury and its universal precaution among the BSc nursing students in selected college of Kolkata. **Methodology:** Non-probability convenient sampling technique was used to select 38 BSc Nursing students from “Ma Sarada college of Nursing”, Ramakrishna Mission Seva Pratisthan, Kolkata. Self-structured knowledge questionnaire was used to assess level of knowledge among the BSc Nursing students. **Result:** Out of 38 students 1(2.63%) student had fair knowledge, 36(94.74%) had moderate knowledge and 1(2.63%) had good Knowledge about needle stick injury and its universal precaution. The study findings also reveals significant association of knowledge with demographic variables like “Religion”, “Previous exposure to needle stick injury” and “Sources of information regarding needle stick injury” and no significant association with demographic variables like “Age” and “Immunization status” of the students. **Conclusion:** The study concluded that majority of the students have moderate knowledge, so information booklet was distributed. Hence, it is recommended to provide more knowledge and information to BSc Nursing students regarding Needle Stick Injuries and its universal precaution.*

Keywords: Knowledge, Needle Stick Injury, Universal Precaution

1. Introduction

“When You Know Better You Do Better”.

-Mayel Angelou

A needle stick injury is the penetration of the skin by a needle on other sharp objects which has been in contact with other blood tissue on other body fluids. WHO defined NSI as “A penetrating stab wound from a needle or other sharp objects that may result in exposure to blood or other body fluids”. In 2007, the WHO estimated 2 million needle stick injuries per year globally and 35.7 million health care workers in the world are exposed to the risk of needle stick injury in India.^[1] Universal precautions are designed to prevent infection from inoculation, contact with mucous membrane, such as mouth or eye or through skin damages such cuts. WHO stated that hospital environment is the common place for NSIs among HCWs and reported evidences of Hepatitis B (37.6%), Hepatitis C (39%) and HIV syndrome (4.4%) are the result of such deleterious NSIs (Goel, Kumar, Lingwiah & Singh, 2017). The centers for Diseases Control and Prevention estimated that 385,000 HCWs suffers from NSIs are United States in a year (CDC, 2008).^[2]

Nurse’s act in the forefront for patient treatment and care which expose them to unavoidable NSIs causing possible transmission of infections agents like Hepatitis B, Hepatitis

C, Human immunodeficiency virus (HIV) and many more. Moreover, the student nurses are new to clinical environment and thus are more prone to have NSIs.^[3] Increase in the incidence of needle stick injury and infection among health workers makes it necessary to assess student’s knowledge regarding needle stick injury and its universal precaution among the nursing students.

2. Literature Survey

B Sudha & Dr. Vselvanayaki (2019) conducted a descriptive study on “Knowledge of Nursing students on needle stick injury at selected college of Puducherry”. A sample size of 107 BSc Nursing 1st year students was selected by convenient Sampling technique, structure knowledge questionnaires was used for data collection. Result shows majority 82% had poor knowledge, 16.82% had average knowledge and 0.3% student had good knowledge. The study concluded that there was a necessity to educate nursing students on the prevention and the consequence of needle stick injuries.^[4]

G Jurimoni, A Sultana Jesmin, Shiranya, Sratna (2017) conducted a cross sectional study on “Knowledge, Attitude, Practice and Prevalence of Needle Stick Injuries among Health Care Workers in a tertiary care hospital of Assam”. A sample size of 90 HCWs were selected by simple random sampling, a predesigned and pretested proforma was used

for data collection. The final study findings shows 21.1% NSIs cases occurred within the hospital settings, 100%, 98.9% and 67.8% of HCWs were aware about HIV, Hep B and Hep C respectively. This study conducted that a pre-employment training is needed to improve knowledge, attitude and practice regarding NSI among health care workers.^[5]

P A Anjana, T Reshma, Renjitha (2021) conducted a quantitative study on “Effectiveness of structured teaching program on knowledge regarding post exposure prophylaxis following needle stick injury among BSc Nursing students at selected college in Kochi”. Convenience sampling technique was used to select a sample size of 157 students and semi-structured knowledge questionnaire was used for data collection. After the post test, impression shows that 73 students gained good knowledge and 84 had average knowledge regarding post exposure prophylaxis following needle stick injury. The study concluded that education program was effective in improving knowledge regarding post exposure prophylaxis following needle stick injury among BSc Nursing students.^[6]

3. Problem Definition

A study to assess the knowledge regarding needle stick injury and its universal precaution among the BSc Nursing students in selected college, Kolkata with a view to prepare information booklet.

4. Methodology/Approach

Research Approach: Quantitative Research Approach

Research Design: Descriptive Research Design

Research Setting: Ma Sarada college of Nursing, Ramakrishna Mission Seva Pratisthan, Hazra, Kalighat, Kolkata 26, West Bengal.

Duration of the Study: 3 months

Sample Size: 38 BSc Nursing 2nd semester students

Sampling Technique: Non-probability convenient sampling technique

Development of tool: The tools used for data collection were socio-demographic variables and self-structured knowledge questionnaire. The content validity was obtained by submitting the tools to 5 experts from department of medical surgical nursing and field of medicine. Reliability was compiled for establishing the internal consistency of self-structured questionnaire using split half method to calculate “r” value, i.e., 0.93. Data was calculated by descriptive and inferential statistics in terms of mean, median, frequency distribution, percentage, standard deviation and chi-square analysis.

5. Results/ Discussion

Section I: Description of frequency and percentage distribution of demographic characteristics in table and figures.

(A) Frequency and percentage distribution of study population according to age, [n=38]

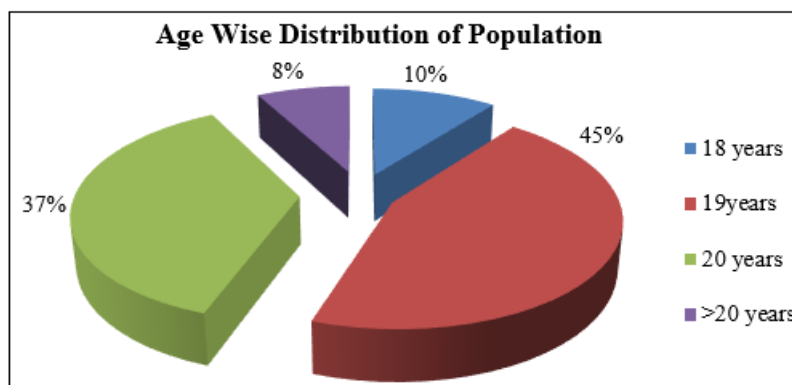


Figure 1: Exploded Pie diagram showing age wise group distribution of the study population.

Figure no 1 showed that out of 38 BSc Nursing students 4(10%) students were of age 18 years, 17(45%) students of age 19 years, 14 (37%) students were of age 20 years and 3(8%) students were of age group >20years.

(B) Frequency and percentage distribution of the study population according to religion.

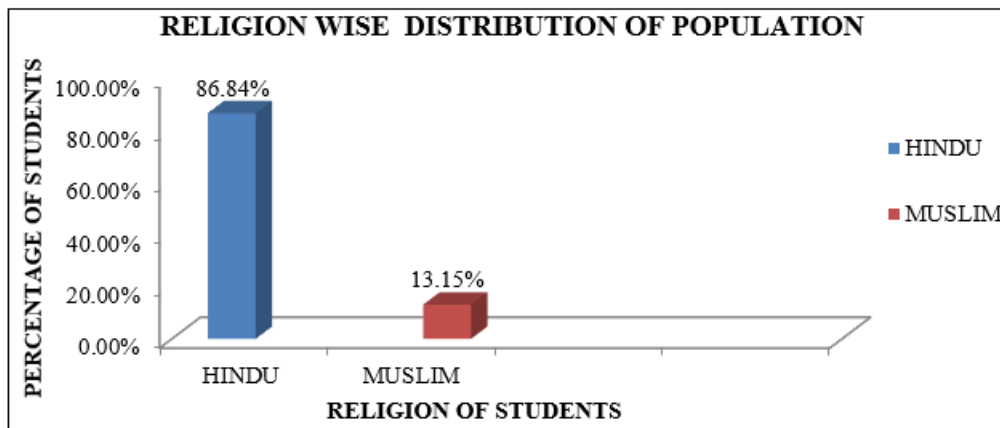


Figure 2: Bar diagram showing religion wise distribution of study population, [n=38]

Figure no 2 depicted that 33 (86.84%) students were Hindu and 5 (13.15%) were Muslim.

(C) Frequency and percentage distribution of the study population according to immunization status.

Table 1: Representing percentage of immunization status of BSc Nursing students, [n=38]

Immunization Status	Frequency	Percentage
Complete	37	97.36%
Not-complete	1	2.64%

Table no 1 showed that 37(97.36%) students had completed their immunization status of Hep-B and 1(2.64%) student did not complete their immunization status of Hep-B.

(D) Frequency and percentage distribution of study population according to previous source of information regarding needle stick injury.

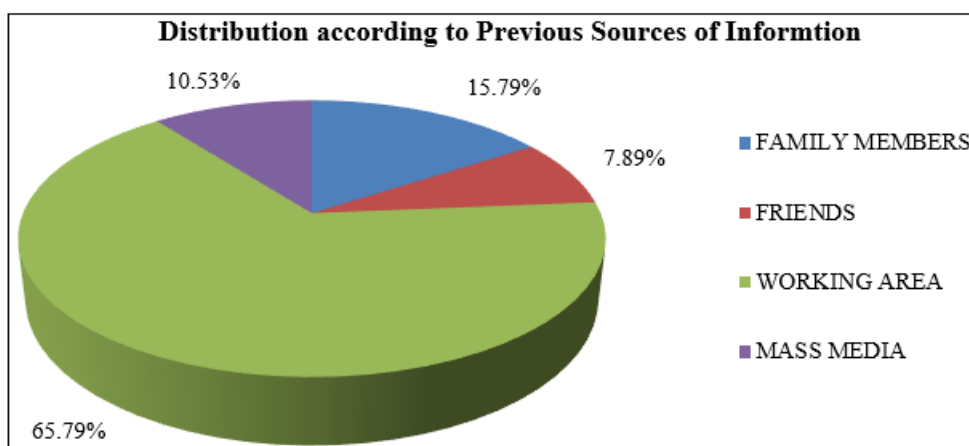


Figure 3: Exploded Pie diagram representing distribution of study population according to previous sources of information, [n=38]

Figure no 3 represented that 6(15.79%) students had previous knowledge regarding needle stick injury from family members, 3(7.89%) students had knowledge from friends, 25(65.79%) had knowledge from working area and 4(10.53%) students had knowledge from mass media.

(E) Frequency and percentage distribution of study population according to previous exposure to needle stick injury.

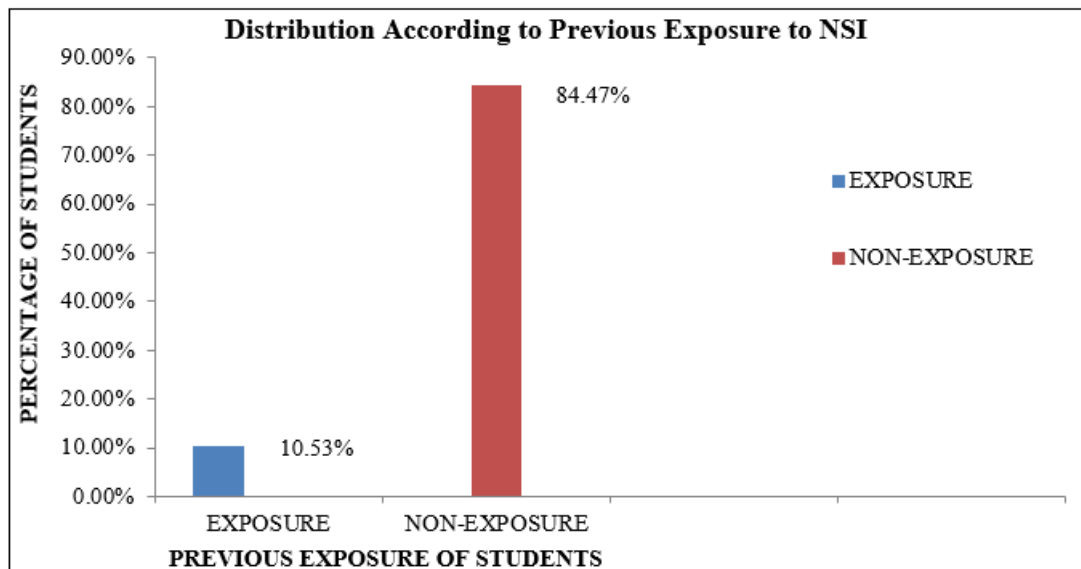


Figure 4: Bar diagram showing distribution of study population according to previous exposure to NSI, [n=38]

Figure no 4 depicted that out of the total sample of 4(10.53%) students had previous exposure to needle stick injury and 34(84.47%) students did not had any exposure to needle stick injury.

Section II: Mean median and standard deviation on level of knowledge regarding needle stick injury and its universal precaution.

Table 2: Mean, Median and Standard Deviation of level of knowledge regarding needle stick injury and its universal precaution among the BSc Nursing students.

Variable	Mean	Median	Standard Deviation
Level of knowledge	16.39	16.5	2.91

Table no 2 showed the mean value of level of knowledge was 16.39, the median value of level of knowledge was 16.5 and the standard deviation value was 2.91 of the BSc Nursing students in selected college, Kolkata.

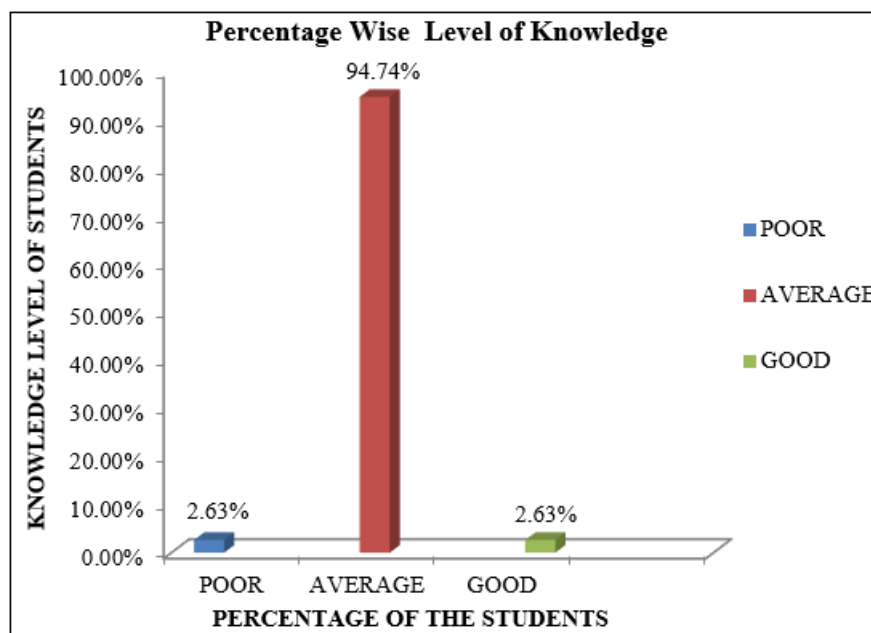


Figure 5: Bar diagram showing percentage wise distribution of level of knowledge, [n=38]

Figure no 5 showed that 1(2.63%) student had fair knowledge, 36(94.74%) students had average knowledge and 1(2.63%) had good knowledge regarding needle stick injury and its universal precaution.

Section III: Association between the level of knowledge regarding needle stick injury and its universal precaution.

Table 3: Association between the level of knowledge regarding needle stick injury and its universal precaution among the BSc Nursing students with their demographic variable, [n=38]

Demographic variables	Fair	Moderate	Good	Total	Chi Square	Tabulated value	df	Remarks
Age								
18 yrs	1	2	1	4	17.94	2.592	6	NS
19 yrs	0	17	0	17				
20 yrs	0	14	0	14				
>20 yrs	0	3	0	3				
Religion								
Hindu	1	31	1	33	0.32	5.991	2	S
Muslim	0	5	0	5				
Immunization								
complete	0	36	1	37	38	5.991	2	NS
Not complete	1	0	0	1				
Previous exposure to needle stick injury								
Exposure	0	4	0	4	0.248	5.991	2	S
Not-exposure	1	32	1	34				
Source of Information regarding NSI								
Family Members	1	5	0	6	2.544	12.592	6	S
Friends	0	3	0	3				
Working Area	1	23	1	25				
Mass Media	0	4	0	4				

Level of significance $p < 0.05$ S = Significant NS = Non Significant

Table no 3 depicted significant associations with demographic variables such as religion, source of information and previous exposure to needle stick injury and did not show any significant association with demographic variables such as age and immunization among BSc nursing students in selected college, Kolkata.

6. Future Scope

- 1) A similar study can be replicated on a larger sample, and then the findings can be made generalized for larger population.
- 2) A similar study can be done on staff nurse and other health care workers to observe their attitude and practice regarding NSIs and its universal precautions.
- 3) A Structured teaching program can performed on both nursing students and health care workers who spread awareness regarding safe practice of NSIs and universal precautions.

7. Conclusion

The study concluded that majority of the BSc Nursing students have moderate knowledge regarding Needle Stick Injuries and its universal precaution. Hence, information booklet was distributed for further development of knowledge and safer practices in future.

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Author Profile



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