

“A Study To Assess The Knowledge Regarding Needle Stick Injury Among The Nursing Students Of Arya School Of Nursing”

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Abstract:

Background: Health care workers face a wide range of hazards in the health care setting including sharp injuries, harmful exposures to chemicals and hazardous drugs and back injuries and so on. Among them the needle stick injuries are the most common occupational injuries for the health care workers. A needle stick injury is the penetration of the skin by a needle or other sharp object's which has been in contact with blood, tissue or other body fluids before exposure and it can cause blood borne diseases such as Hepatitis B(HBV), Hepatitis C(HCV), and even human immunodeficiency virus (HIV). These injuries can occur at any time when people use and disposal of needles. Needles stick injuries (NSI) has always been one of the most important risk factors for healthcare workers (HCWs) for transmission of various infection such as HBV, HCV, and HIV. As per the 2008-2009 HIV estimates, there are an estimate 23.9 lakh people currently living with HIV in India with an adult prevalence of 0.31 percentage in 2009. Variety of procedures like needles recapping injuries sustained in the operating room, blood collection or intravenous line administration, suturing and checking blood sugar can lead to accidental NSI. The researchers felt that nursing students are mostly suitable candidates for training of prevention & management of NSI as they are likely to come across such situations future. This study aims at assessing knowledge of prevention & management of NSI of nursing students.

Methods and Material: As per the objectives quantitative research approach and descriptive research design was selected for the study. Simple randomization sampling technique was used to selected 100 among the nursing students of Arya School of Nursing (ASON), Changsari, Kamrup (R), Assam. Data was collected through structured questionnaire. A structured questionnaire was prepared to assess the knowledge regarding NSI and its prevention. The tools comprise of two sections. Section I: It comprises of question related to demographical variable such as age, gender, religion, residence, qualification, source of information regarding NSI, status of hepatitis vaccination. Section II: It comprises of question related to knowledge regarding NSI.

Result and Analysis: Descriptive and inferential statistics were used for data analysis. The present study shows that majority of the students have moderate knowledge on NSI and its prevention i.e.,66.67%, while 30.30% study participants have adequate knowledge and remaining 3.03% had inadequate knowledge on NSI and its prevention. The socio demographic variable in terms of gender has shown statistically significant association with the knowledge of needle stick injury and its prevention. The chi-square value is found significant in case of gender $p=0.033$. The other socio demographic variables had not shown statistically significant association between the level of knowledge regarding NSI and its prevention.

Conclusion: The overall experience of conducting this study was satisfying and enriching. Thus, it can be concluded that structured questionnaire was effective in assessing the knowledge regarding NSI and its prevention.

Keyword: Needle stick injury; Prevention of NSI; Structured knowledge questionnaires; Health care workers; Occupational injuries.

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I. Introduction

Health care workers (HCW) face a wide range of hazards in the health care setting including sharp injuries, harmful exposures to chemicals and hazardous drugs and back injuries and so on. Among them the needle stick injuries (NSI) are the most common occupational injuries for the HCWs. These injuries can occur at any time when people use and disposal of needles¹. NSI has always been one of the most important risk factors

for HCWs for transmission of various infection such as HBV, HCV and HIV. There is gross under reporting of NSI and, therefore, the incidence of NSI is higher than the current estimates. Study reported a high incidence of needle stick and sharp injuries among HCWs in Jordan. In South Africa, 91 % of junior doctors reported sustaining a NSI in the previous year. Result of another cross-sectional study conducted in Iran among medical and dental students showed that 74.3 percentage had experienced NSIs. In country like India, in spite of large number of awareness programs, it is not possible to estimate the annual incidence of NSI in different occupations because of the scarcity of data. Medical students (MS) & Nursing students (NS) are prone to accidental exposure to blood borne pathogens and body fluids because of multitude of reasons such as, nature of their work, which invest extensive contact with the sick patients, specimen handling lack of experience & skill, eagerness to learn new things and material, lack of awareness about policies and procedures to avoid the same. In turn, a NSI may also pose a risk for a patient if the injured health professional carries HBV, HCV or HIV. Despite their seriousness as a medical event, NSI have been neglected and under reported. Nurses are most common health care professionals who encounter NSI in these day-to-day work. Numerous studies have found nurses to be the commonest group of health care workers experiencing needle stick injuries, needle pricks, sharps injuries represent a significant hazard in professional nursing. Researches also have shows that, between all health care workers, nurses are the ones who sustain a high needle pricks injuries burden ². The current study aims to assess the knowledge on Needle Stick Injury (NSI) and its prevention among students of Arya Nursing College, Changsari, Kamrup (R), Assam.

II. Material And Methods

A quantitative descriptive research approach was carried out to assess the knowledge on NSI among students of ASON.

Study design: In this study, non-experimental descriptive research design was adopted.

Study location: The study was conducted in ASON.

Population: The accessible population of the study was GNM 1st& 2ndyear and ANM 1st& 2ndyear students of ASON.

Sampling technique: In this study, data was collected by convenience sampling technique.

Sample size: The sample size was 100

Inclusion criteria: GNM 1st& 2ndyear and ANM 1st& 2ndyear students of ASON, who are willing to give consent.

Exclusion criteria: GNM 1st& 2ndyear and ANM 1st& 2ndyear students of ASON. with exposed NSI.

Development of the tools: The tool was developed and standardized from extensive literature review, objectives of the stud. Personal and professional experience of the invigilator and experts guidance were reviewed to develop an appropriate tools.

Description of tools: The tool consists of two sections:-

SECTION I: Demographic variables- This section consists of background data such as age, gender, religion, residence, qualification, source of information regarding NSI, status of Hepatitis vaccination. It is scored by coding the socio-demographic data.

SECTION II: Structured knowledge questionnaires- This section meant to assess the to assess knowledge of GNM 1st& 2nd year and ANM 1st& 2nd year students of ASON, regarding NSI. It includes 20 multiple choice knowledge questionnaires of NSI. Each questionnaire has three alternative responses out of which only one response was correct and rest of two were wrong.

The scoring key was prepared and each correct answer has a score of “one”, wrong answer has a score of “zero”. Thus, a maximum of 20 was allotted to knowledge on NSI.

KNOWLEDGE LEVEL	PERCENTAGE	MARKS
Inadequate knowledge	0-50%	<10
Moderate knowledge	51-75%	11-15
Adequate knowledge	76-100%	16-20

Ethical clearance:

- Study was done after obtaining ethical approval from the Institutional Ethical Committee, Arya School of Nursing, Changsari, Kamrup (R), Assam.
- Permission taken from Principal, class co-ordinator of GNM 1st& 2ndyear and ANM 1st& 2ndyear students of ASON.
- Verbal and written consent obtained from all participants after explaining the purpose and other details of the study.
- The subjects were ensured of the confidentiality of the data obtained.

III. Result

The study findings are based on as follows;

Section I: Socio demographic characteristics of the study population.

Section II: Knowledge on NSI and its prevention among students.

Section III: Association of socio demographic variables with knowledge on NSI and its prevention.

SECTION: I

Table I.I: Socio demographic characteristics of the study population.
(N=100)

Sl.no	Demographic data	Frequency
1.	Age in years	
	18	10
	19	6
	20	19
	21	17
	22	25
	23	4
	24	5
	25	7
2.	Gender	
	Male	30
3.	Religion	
	Hindu	56
	Muslim	40
	Christian	3
4.	Residences	
	Rural	56
	Urban	44
5.	Qualification	
	GNM 1 st year	18
	GNM 2 nd Year	38
	ANM 1 st Year	26
6.	Sources of information regarding NSI	
	Books, magazines	25
	Hospital	32
	Peer group, family	24
	Mass media	19
7.	Status of hepatitis vaccination	
	None	18
	First dose only	26
	Second dose	22
	Third dose	19
	Booster dose	15

SECTION II

Table 2.1: Overall Knowledge of College students
(N=100)

CATEGORY	FREQUENCY	PERCENTAGE
Inadequate Knowledge	3	3.03
Moderate Knowledge	67	66.67
Adequate Knowledge	30	30.30
Total	100	100

Table 2.1 shows that 3.03% of study participants have inadequate knowledge, 66.67% have moderate while 30.30% have adequate knowledge on Needle stick Injury and its prevention

SECTION III

Table 3.1: Association of socio demographic variables with knowledge on needle stick injury and its prevention.

Variables		Knowledge on needle stick injury and its prevention			P value
		Inadequate	Moderate	Adequate	
Gender	Male	0.00	15 (51.72)	14 (48.28)	0.033
	Female	2 (2.86)	52 (74.29)	16 (22.86)	
Religion	Hindu	2 (3.57)	38 (67.86)	16 (28.57)	0.571
	Muslim	0.00	27 (69.23)	12 (30.77)	
	Christian	0.00	1 (33.33)	2 (66.67)	
	Others	0.00	1 (100.00)	0.00	
Residences	Rural	6 (18.78)	26 (58.05)	24 (23.17)	0.717
	Urban	4 (22.22)	24 (57.69)	16 (20.09)	
Qualification	GNM 1 st year	0.00	13 (72.22)	5 (27.78)	0.752
	GNM 2 nd year	2 (5.26)	27 (71.05)	9 (23.68)	
	ANM 1 st year	0.00	16 (64.00)	9 (36.00)	
	ANM 2 nd year	0.00	11 (61.11)	7 (38.89)	
Sources of Information	Books, Magazines	0.00	16 (64.00)	9 (36.00)	0.161
	Hospital	0.00	23 (71.88)	9 (28.13)	
	Peer group	0.00	19 (79.17)	5 (20.83)	
	Mass media	2 (11.11)	9 (50.00)	7 (38.89)	
Status of HB Vaccination	None	0.00	14 (77.78)	4 (22.22)	0.712
	1 st Dose only	2 (7.69)	15 (57.89)	9 (34.62)	
	2 nd Dose	0.00	15 (68.18)	7 (31.82)	
	3 rd Dose	0.00	12 (63.16)	7 (36.84)	
	Booster Dose	0.00	11 (78.57)	3 (21.34)	

Table 3.1 depicts that, socio demographic variable in terms of Gender has shown statistically significant (P=0.033) association with the knowledge of needle stick injury and its prevention.

IV. Discussion

The present study has been undertaken to assess the knowledge on NSI and its prevention among students of ASON, Changsari. Data was collected from 100 school students between age 18 and 27 years.

Student’s level of knowledge regarding NSI and its prevention:

The present study evaluated the students’ knowledge on NSI and its prevention among school students which were categorised into adequate, moderate and inadequate knowledge. The mean age of student was 21.55 with a standard deviation of 2.315407. The study found that majority of the students have moderate knowledge on NSI and its prevention i.e., 66.67%, while 30.30% study participants have adequate knowledge and remaining 3.03% had inadequate knowledge on NSI and its prevention. These findings of the present study is supported by the research study conducted by Gawad M, A Alwabr on knowledge and practice of needle stick injury preventive measures among nurses in Sanaa city hospitals in Yemen in 2018 ^[5] where 114 (44%) respondents had poor knowledge of NSI preventive measures, 75 (29%) had a fair knowledge and 70 (27%) had good knowledge.

Association of demographic variables and knowledge:

Chi Square and Fisher Exact’s test was calculated to see the association between the socio demographic variables and knowledge of NSI and its prevention. The chi-square value is found significant in case of gender where the P value was 0.033. Hence there is association between knowledge and gender among the participants. Researcher does not find any study related to association of knowledge on Needle Stick injury and its prevention and selected demographic variables. In contrast to this , study conducted by Bhattarai S, K C Smriti, Pradhan P MS, Lama S and Rijal S (2012) among MS on HBV vaccination status and NSI and sharps related injuries in Nepal using a semi structured questionnaire out of 930 students, 622 answered questionnaire which gave the response rate of 66.9%. 20 responses were incomplete and 602 became valid for analysis. 90 students (42.8%) had experienced at least one injury among which 2 students reported exposure to HIV positive patient (2.2%) and 4 students to HBV patient (4.4%). HBV vaccination status of the respondents was highly significant with the socio-demographic variables, faculty p=0.0024 and gender p=0.007.⁶

V. Conclusion

On the basis of the data analyses, it can be concluded that the knowledge level of most of the nursing student was found to be moderate i.e. 66.67%.

Also, the finding shows that there is a significant association between the knowledge and selected demographic variables in-case of gender. The calculated chi-square value is found significant in case of gender where the P value was 0.033.

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