

Nursing Students' Awareness and Occurrence of Needle Stick Injury

Nirmala V¹, Suni M.S²

¹Professor Cum Vice principal, MES college of Nursing, Perinthalmanna, Kerala, India,

²Clinical Psychologist, Department of Psychiatry, MES Medical College Hospital, Kerala, India

Abstract

Needle stick injuries caused by needles or sharps are one of the common accidental health hazards for the health care professionals. The present study is aimed to assess the awareness and occurrence of needle stick injuries among the nursing students. The research approach used was quantitative and the research design used was non experimental descriptive design to achieve the objectives of the study. The study participants were 134 students studying B.Sc Nursing in a selected college, Perinthalmanna. Structured questionnaire to assess the awareness regarding NSI and determine the occurrence of NSI was used to collect the data. The findings of the study indicate that majority of the students (61%) had inadequate awareness. Out of 134 nursing students, 44 students (33%) had experienced NSI; the most common device involved was the needle on the disposable syringe. The findings of the study indicate the need to enhance the awareness of the student nurses regarding NSI, safe practices, post exposure prophylaxis, protocols and guidelines of the institution, universal safety precautions and safe disposal of sharp items through educational interventions at their entry level of clinical practice.

Keywords: Needle stick injuries, Post exposure prophylaxis, Universal precautions, and Safe disposal of sharps

Introduction

Needle stick injuries are injuries caused by needles or any sharps that can occur at any time unexpectedly. Needle stick injury is one of the common accidental health hazards for health care professionals and the student nurses are at increased risk due to various factors. Anxiety, fear, increased workload, lack of experience in handling the various tasks in the clinical area, and lack of timely training regarding needle stick injuries and safety practices contributes to the proneness of student nurses to needle stick injuries.

The prevalence of needle stick and sharp injuries are highest among the nurses as 38.4% when compared to other health care workers and needle on the disposable syringe was the most common cause of injury¹. Avoidable practices like recapping of needles were contributing to the injuries². Injury occurrence was more likely to occur in places such as patient rooms and operating rooms³. Due to NSI, Health care workers are at risk of occupational acquisition of blood borne

pathogens such as HIV, hepatitis B and C, and other diseases². Knowledge regarding NSI and safe practices at work is essential to protect oneself from untoward consequences of NSI. Hence, the present study is undertaken to assess the awareness and occurrence of needle stick injuries among the nursing students.

Material and Method

Objectives: Assess the nursing students' awareness regarding needle stick injuries

Determine the occurrence of needle stick injuries among the nursing students'

Research approach: Quantitative approach was used to assess the awareness and occurrence of needle stick injuries among the nursing students'.

Research design: Non experimental descriptive research design was used to achieve the objectives of the study.

Population: The target population of the study was the students studying B.Sc Nursing in a selected college of nursing, Malappuram.

Setting: The study was conducted in a selected college of nursing, Perinthalmanna. The annual intake of students for B.Sc Nursing programme was 50.

Sample and sampling technique: The study participants comprised of 134 students studying B.Sc Nursing in a selected college of nursing, Perinthalmanna, Kerala. They were included by complete enumeration method.

Description of the tool:

Section A: Sample characteristics

It consisted of 6 items for obtaining information as their age in years, gender, year studying, Hepatitis B vaccination status, and the number of doses taken.

Section B: Structured questionnaire to assess the awareness regarding needle stick injuries.

It consisted of 20 multiple choice questions

regarding needle stick injuries. Each statement had four choices, and among the four choices one was the right option. The total score was 20. The level of awareness was classified as excellent, average and inadequate.

Section C: Structured questionnaire to determine the occurrence of needle stick injuries among nursing students'.

It consisted of 8 items for obtaining informations as experience of needle stick injury, when and how it happened, whether and to whom they reported, device involved with injury, and any post exposure investigations were carried out.

Data collection procedure:

The data was collected after obtaining official permission from the principal, college of nursing. Informed consent was obtained from each study participant after discussing the details of the study and assuring the confidentiality of information. It took about 30 minutes to complete the questionnaire by each participant.

Findings

Table 1: Distribution of Nursing Students according to their characteristics

Characteristics	Categories	Frequency n(134)	Percentage (%)
Age in years	<19	46	35
	20-22	86	64
	>23	02	01
Gender	Female	134	100
Year studying	1 st	37	28
	2 nd	37	28
	3 rd	32	24
	4 th	28	20
Course	B.Sc Nursing	134	100
Vaccination	Hepatitis B Vaccine	134	100

Table 1 show that majority of the nursing students 64% n (86) were between 20-22 years of age, and all the nursing students (100%) participated in the study were females. Out of 134 students, 37 (28%) each belonged

to first and second year of studies, 32 (24%) in the third year, and 28 (20%) in the fourth year. All the students were doing B.Sc Nursing and had their three doses of Hepatitis vaccination in the beginning of the course itself.

Table 2: Distribution of Nursing Students based on their level of awareness

Parameter	Categories	Frequency n(134)	Percentage (%)
Level of awareness	Excellent	01	01
	Average	51	38
	Inadequate	82	61

Table 2 indicates that majority of the students 61% n (82) has inadequate awareness regarding NSI and 38% n(51) has adequate awareness about NSI.

Table 3: Distribution of Nursing Students based on the occurrence of NSI

	Categories	Frequency n(134)	Percentage (%)
Occurrence of NSI	Yes	44	33
	No	90	67

Table 3 reveals that the out of 134 nursing students, 44 (33%) had experienced NSI and 90 of them (67%) had not experienced NSI.

Table 4: Distribution of Nursing Students (who experienced NSI), according to the characteristics of occurrence of NSI

Characteristics	Categories	Frequency n(44)	Percentage (%)
Year of occurrence	1 st	18	41
	2 nd	22	50
	3 rd	04	09
	4 th	-	-
When happened	During recapping	12	27
	Non co-operation of the patient	04	09
	While Preparation of medicine	08	18
	Checking blood glucose	14	32
	During blood sample collection	02	05
	While discarding the biomedical waste	04	09
Whether it was reported	Yes	33	75
	No	11	25
To whom did you report	Teacher	01	02
	Friends	08	18
	Staff nurse on duty	22	50
	Supervisor	02	05
	I did not report	11	25
Posting area in which the incident occurred	Ward	35	80
	ICU	04	09
	Emergency room	03	07
	Labour room	01	02
	OT	01	02

Cont... Table 4: Distribution of Nursing Students (who experienced NSI), according to the characteristics of occurrence of NSI

Device involved	Needle on disposable syringe	37	84
	Prefilled syringe	04	09
	Disposable scalpel	01	02
	Other needle	02	05
Blood investigation	Yes	02	05
	No	42	95

Table 4 reveals that out of 44 nursing students with NSI, majority of them 50% n (22) had NSI during their 2nd year of studies, 32% had NSI while checking blood glucose, 75% n (33) stated that they had reported the incident immediately after occurrence, in which 50% had reported to the staff nurse on duty, and the remaining 25% reported to teacher, friends and supervisor. 80% n (35) stated that the incident took place in the ward, 84% n (37) stated that the device involved was the needle on the disposable syringe and only 5% n (2) underwent blood investigation immediately after the incident.

Conclusion

Findings of the study reveal that the awareness regarding needle stick injuries among the student nurses are inadequate. As a health care professional, the student nurses are at increased risk of NSI and its related complications. Hence, it is essential to enhance their awareness regarding NSI, safe practices, post exposure prophylaxis, protocols and guidelines followed in the institution, universal safety precautions, and safe disposal of sharp items. As a preventive strategy, it is essential to provide the educational training at their entry level of clinical practice itself to avoid occurrence of NSI and its associated risks in future.

Conflict of Interest: None.

Source of Funding: None.

Ethical Clearance: Obtained from institutional human ethical committee.

References

1. Sharma, Gupta A, Arora A. Knowledge, attitude and practices on needle stick and sharp injuries in tertiary care cardiac hospital: a survey. *Indian journal of Medical Science*. 2010 sep; 64(9):396-401.
2. Rahul Sharma, SK Rasanias, Anita Verma, and Saudan Singh. Study of prevalence and response to needle stick injuries among health care workers in a tertiary care hospital in Delhi, India. *Indian Journal of Community Medicine*. 2010 Jan; 35(1): 74-77.
3. Toru Yoshikawa et al. Incidence rate of needle stick and sharp injuries in 67 Japanese hospitals: A national surveillance study. *PLOS one*. 2013; oct 8(10).
4. Varsha K. Pavithran, R. Murali, Madhusudan Krishna, A. Shamala, Maanasi Yalamalli, and A. Vinod Kumar. Knowledge, attitude, and practice of needle stick and sharp injuries among dental professionals of Bangalore, India. *Journal of International society of Preventive and Community Dentistry*. 2015 sep-Oct; 5(5): 406-412.
5. Gurubacharya DL, Mathura KC, Karki DB. Knowledge, attitude and practices among health care workers on needle-stick injuries. *Kathmandu university medical journal*. 2003 Apr-Jun; (2): 91-4.
6. Canadian centre for occupational health and safety. OSH answers fact sheets, needle stick injury. Canada:2018
7. All India institute of medical sciences. Needle stick injuries. New Delhi: 2017
8. Virtual medical centre. Preventing needle stick injuries. Australia: 2018