International Journal of Community Medicine and Public Health
Sonia et al. Int J Community Med Public Health. 2019 May;6(5):2064-2068
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20191819

Original Research Article

Study of knowledge, attitude and practice among nurses regarding needle stick and sharp item injuries

Sonia[1], Sukhbir Singh[2]*, Brijender Singh[2], Satpal Singh[3], Anil Khurana[3], Ramesh Verma[4]

[1]DCRUST, Murthal, Sonepat, Haryana, India
[2]Department of Hospital Administration, [4]Department of Community Medicine, PGIMS, Rohtak, Haryana, India
[3]Department of Management Studies, DCRUST, Murthal, Haryana, India

Received: 08 February 2019
Revised: 16 March 2019
Accepted: 18 March 2019

***Correspondence:**
Dr. Sukhbir Singh,
E-mail: drbrar1980@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Needle stick injuries are an important occupational hazard for nursing personnel as they form an important mechanism for transmission of blood borne pathogens. A needle stick injury (NSI) is defined as an accidental skin-penetrating stab wound from a hollow-bore needle (or any sharp) containing another person's blood or body fluid. Sharp injury (SI) is defined as a skin-penetrating stab wound caused by sharp instruments & accidents in a medical setting.
Methods: The study is hospital based cross-sectional descriptive in PGIMS Rohtak. The study was designed towards achievement of all objectives. The study was carried out from 14 June 2016 to 13 August 2016.
Results: Majority (6%) of sample were in the age group of 20-25 years and (31%) in age group of 26-30 years. Majority of sample (98.5%) were female. Majority of sample (90%) were GNM, (6.5%) were B.Sc Nursing, (1.5%) was M.sc Nursing. Majority of sample (91.5%) were married.
Conclusions: The study identified the presence of suboptimal practices that put both staff nurses and patients at significant risk of contracting occupational infections.

Keywords: Knowledge, Attitude, Practice, Needle stick injury

INTRODUCTION

A needle stick injury (NSI) is defined as an accidental skin-penetrating stab wound from a hollow-bore needle (or any sharp) containing another person's blood or body fluid. Sharp injury (SI) is defined as a skin-penetrating stab wound caused by sharp instruments & accidents in a medical setting.[1]

Needle stick injuries are an important occupational hazard for nursing personnel as they form an important mechanism for transmission of blood borne pathogens. Health care professionals are exposed to variety of dangers like infections, cuts and needle stick injuries, exposure to anaesthetic gases, radiations, dermatitis causing substances, vaccines serum etc. This study focuses on issues related to some of these risks & possible ways and means on how to overcome these risks. Hence the knowledge of nurses about the prevention & management of needle stick injuries and practicing standard precautions is critical.[2]

According to World Health Report (WHR) 2002, out of 35 million healthcare workers (HCWs), 2 million experience percutaneous exposure to infectious diseases each year. It further notes that 37.6% of hepatitis B, 39% of hepatitis C and 4.4% human immunodeficiency virus (HIV)/AIDS among HCWs around the world are due to NSIs globally. NSIs are the most common source of

occupational exposure to blood and the primary cause of blood-borne infections of HCWs in India, around 3-6 billion infections are given per year, of which two-third infections are unsafe (62.9%) and the use of glass syringe is constantly associated with a higher degree of unsafeness.[3]

Nurses are persons working in health care setting & they are potentially exposed to infectious material such as blood, tissue, specific body fluids, medical supplies, equipment or environmental surfaces contaminated with these substances. They are frequently exposed to occupational hazards through percutaneous injury such as needle stick or cut with sharps, contact with the mucous membrane of eyes or mouth of an infected person, contact with non-intact skin exposed with blood or other potentially infectious body fluids. That's why this study was planned in a tertiary care institute of Haryana with the aim to assessment of knowledge, attitude and practice among nurses regarding needle stick & sharp item injuries in a tertiary care institute Pt. B D Sharma PGIMS, Rohtak.

Objectives

- To assess the level of knowledge, attitude and practice among nurses regarding needle stick and sharp injuries in Pt. B. D. S. PGIMS, Rohtak.

METHODS

Study design

The study was hospital based cross-sectional descriptive in PGIMS Rohtak. The study was designed towards achievement of all objectives.

Study area

The study was carried out in PT. BD Sharma, PGIMS, and Rohtak from 14 June 2016 to 13 August 2016.

Study population

The study population consisted of Staff Nurses who came into contact with patients, or were potentially exposed to body fluids from patients while attending to or handling samples from patients.

Study tool

Questionnaire was adopted and developed with modification from related study– occupational needle stick and sharps injuries among hospital healthcare workers in Bale Zone, Southeast Ethiopia.

RESULTS

Table 1 showed that a total of 200 nurses were included in the main study. The description of demographic characteristics was included in term of age, sex, qualification, marital status, place of posting, experience.

Table 1: Detail of nursing staff.

	Total staff nurses posted	Subjects taken
Hospital area		
Medicine ward	50	24
Surgery ward	54	27
Obst and gynae ward	56	26
SOT complex ward	23	11
Paediatrics ward	35	17
A & E ward	59	29
Orthopaedics ward	18	9
Chest and TB ward	13	7
ENT ward	7	3
Eye ward	9	4
Super speciality block		
Cardiology ward	6	2
CTVS ward	7	5
Urology ward	7	4
Nephrology ward	14	7
BPS ward	14	7
Intensive care unit		
CTVS ward	12	5
Cardio ward	6	2
A+E ward	16	8
Ward 25 ICCU	8	4
Total	414	200

Table 2 showed that majority (6%) of sample were in the age group of 20-25 years, (31%) in age group of 26-30 years, (19%) in age group of 31-35 years, (8.5%) in age group of 36-40 years, (5.5%) in age group of 41-45 years, (7.5%) in age group of 46-50 years, (7.5%) in age group of 51-55 years, (15%) in age group of 56-61 years. Majority of sample (98.5%) were female and (1.5%) were male. Majority of sample (90%) were GNM, (6.5%) were B.Sc Nursing, (1.5%) was M.sc Nursing. Majority of sample (91.5%) were married & (8.5%) were unmarried. Majority of sample (31%) have 1-5 years of experience, (31%) have 6-10 years of experience, (1.5%) have 11-15 years of experience, (5%) have 16-20 years of experience, (4.5%) have 21-25 years of experience, (13%) have 26-30 years of experience, (7.5%) have 31-35 years of experience, (10%) have 36-40 years of experience.

In Table 3, all subjects said that dirty hands transmit the disease. Majority (96.5%) of sample had attended training related to infection prevention control. Majority (92.5%) of sample know about needle stick/sharp injuries post exposure prophylaxis. Majority (95%) of sample know about universal precaution guidelines regarding needle stick/sharp injuries. Majority (87.5%) of sample know about hospital had a system for reporting accidental exposure to blood and body fluids including needle stick and sharp object. Majority (89.5%) of sample have

received Hepatitis B vaccination. Majority (48%) of sample have sustained needle stick/sharp injuries in last one year, minority (42.5) of sample have not that & not recalled (9.5%) of sample also have not that. Majority (56.5%) of sample have not received any post exposure prophylaxis for needle stick/sharp injury in last one year and majority (99%) of sample were discarding the needle/sharp immediately after using on the patient, minority (1%) of sample didn't that. Majority (58%) of sample have not any accidental spillage blood/body fluid on the body.

Table 2: Demographic characteristics of study subjects (n=200).

S. no.	Characteristics	Demographic variables	Frequency	Percentage (%)
1.	Age (in years)	20-25	12	6
		26-30	62	31
		31-35	38	19
		36-40	17	8.5
		41-45	11	5.5
		46-50	15	7.5
		51-55	15	7.5
		56-61	30	15
2.	Sex	Male	3	1.5
		Female	197	98.5
3.	Qualification	GNM	180	90
		B. Sc nursing	13	6.5
		M. Sc nursing	3	1.5
4.	Marital status	Married	183	91.5
		Unmarried	17	8.5
5.	Experience (years)	1-5	62	31
		6-10	62	31
		11-15	3	1.5
		16-20	10	5
		21-25	9	4.5
		26-30	26	13
		31-35	15	7.5
		36-40	13	6.5

Table 3: Assessment of level of knowledge, attitude, and practice among staff nurses (n=200).

S. no.	Knowledge about	Answer	Frequency	Percentage (%)
1.	Dirty hands transmit the disease	Yes	200	100
		No	0	0
2.	Attended any training related to infection prevention control	Yes	193	96.5
		No	7	3.5
3.	Needle stick/sharp injuries post profile exposure prophylaxis	Yes	185	92.5
		No	15	7.5
4.	Universal precaution guidelines regarding needle stick/sharp injuries	Yes	190	95
		No	10	5
5.	Hospital have a system for reporting accidental exposure to blood and body fluids including needle stick & sharp object	Yes	175	87.5
		No	10	5
		Don't know	15	7.5
6.	Received hepatitis B vaccination	Yes	179	89.5
		No	21	10.5
7.	Recapping needles after the use to the patient	Yes	86	43
		No	114	57
8.	Sustained needle stick/sharp injuries in last one year	Yes	96	48
		No	85	42.5
		Not recalled	19	9.5
9.	Received any post exposure prophylaxis for needle stick/sharp injury in last one year	Yes	74	37
		No	113	56.5
		Not recalled	13	6.5

Continued.

Sr. No.	Knowledge about	Answer	Frequency	Percentage (%)
10.	Discarding needles/ sharp immediately after using on patient in your hospital	Yes	198	99
		No	2	1
11.	Any medicine for post exposure prophylaxis of needle stick/sharp injury available in your hospital or ward	Yes	166	83
		No	23	11.5
		Not known	11	5.5
12.	Any accidental spillage blood/body fluid on your body	Yes	84	42
		No	116	58

DISCUSSION

Majority (6%) of sample were in the age group of 20-25 years, (31%) in age group of 26-30 years, (19%) in age group of 31-35 years, (8.5%) in age group of 36-40 years, (5.5%) in age group of 41-45 years, (7.5%) in age group of 46-50 years, (7.5%) in age group of 51-55 years, (15%) in age group of 56-61 years. In the study subject maximum (90%) subjects were GNM, (6.5%) were B. Sc Nursing, (1.5%) was M.sc Nursing. Majority of subjects (31%) had 1-5 years of experience, 31% subjects had 6-10 years of experience, 1.5% had 11-15 years of experience, 13% had 26-30 years of experience and 10% had 36-40 years of experience. All subjects said that dirty hands transmitted the disease. Majority (96.5%) of sample had attained training related to infection prevention and control. Majority (92.5%) of sample knew about needle stick/sharp injuries post exposure prophylaxis treatment but 7.5% of samples were not aware. Jaber et al and Salekar et al reported the similar observations.[4,5]

Majority (95%) of subjects knew about universal precaution guidelines regarding needle stick/sharp injuries while 5% of subjects were not aware. Majority (87.5%) of sample knew about hospital have a system for reporting accidental exposure to blood & body fluids including needle stick & sharp object. Parbhu quoted the similar results.[6] Majority (89.5%) of sample had received Hepatitis B vaccination, few (10.5%) of sample had not received the vaccine. Nearly half (57%) of subjects were not recapping the needle after the using to patient and 43% of subjects had knowledge. Majority (48%) of sample had sustained needle stick/sharp injuries in last one year. 56.5% of sample had not received any post exposure prophylaxis for needle stick/sharp injury in last one year. Maximum (99%) of sample were discarding the needle/sharp immediately after using on the patient in hospital. 83% subjects knew the medicines for post exposure prophylaxis of needle stick/sharp injury available in hospital or ward. 58% of sample had not any accidental spillage blood/body fluid on the body. Parbhu et al and Guruprasad et al revealed the similar observations.[6,7]

CONCLUSION

The needle recapping was key modifiable risk behavior. The study identified the presence of suboptimal practices that put both staff nurses and patients at significant risk of contracting occupational infections.

Recommendations

The healthcare authorities should arrange training for staff nurses. Health policy makers and hospital administrators should formulate strategies to improve the working condition for staff nurses and increase their adherence to universal precautions. Furthermore, regular reporting, follow up and evaluation of occupational injury exposures need to be introduced. Follow up study is needed to determine the actual incidence of NSSI exposure and to which type disease staff nurses are exposed.

Limitations

- The study was limited to staff nurses at single hospital.
- The study was limited to 200 staff nurses only.

ACKNOWLEDGEMENTS

The Questionnaire was adopted and developed with modification from related study– occupational needle stick and sharps injuries among hospital healthcare workers in Bale Zone, Southeast Ethiopia.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Pavithran VK, Murali R, Krishna M, Shamala A, Yalamalli M, Kumar AV. Knowledge, attitude, and practice of needle stick and sharps injuries among dental professionals of Bangalore, India. J Int Soc Prev Community Dent. 2015;5(5):406-12.
2. American Nurses Association – Independent Study Module Needle stick Safety and Prevention Available at: www.who.int/occupational_health/activities/1anaism.pdf. Accessed on 2 February 2019.
3. Wilburn S, Worthington K. JCAHO becomes a force in needlestick prevention. Am J Nursing. 2001;102(1):104.

4. Jaber MA. A survey of needle sticks and other sharp injuries among dental undergraduate students. Int J Infect Control. 2011;7:1–10.
5. Salekar S, Motghare DD, Kulkarni MS, Vaz FS. Study of needle stick among health care workers at a tertiary care hospital. Indian J Public Health. 2010;54:18–20.
6. Prabhu A, Rao AP, Reddy R, Sugumaran K, Mohan G, Ahamed S. Needle safety awareness among dental nurses. Workplace Health Saf. 2014;62:243–8.
7. Guruprasad Y, Chauhan DS. Knowledge, attitude, and practice regarding risk of HIV infection through accidental needlestick injuries among dental students of Raichur, India. Natl J Maxillofac Surg. 2011;2:152–5.

Cite this article as: Sonia, Singh S, Singh B, Singh S, Khurana A, Verma R. Study of knowledge, attitude and practice among nurses regarding needle stick and sharp item injuries. Int J Community Med Public Health 2019;6:2064-8.