

A Cross Sectional Study on Prevalence of Needle Stick Injury And Management Practices Among Health Workers Working In A Teaching Hospital, Tripura

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Abstract

Introduction: Needle stick injuries are most common occupational hazards health care workers are faced with. These injuries usually occur during activities such as transfusion, blood sampling, needle disposal, waste collection, transferring body fluids and transferring blood. Injuries due to contact with contaminated needles, may have serious physical and psychological consequences.

Objectives: To estimate the prevalence of Needle stick injuries among Health care workers and reporting of needle injuries among health worker.

Materials & method: A cross sectional study was conducted among 120 health workers by pre tested structured questionnaire.

Results: The prevalence of needle stick injury in the present study found to be 76.7%.

Conclusion: High prevalence of needle sticks injury was observed in the present study.

Keywords: Needle stick injuries, Percutaneous exposures, Tripura, Agartala,

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I. Introduction

Needle stick injuries (NSIs), also referred to as sharps injuries, percutaneous injuries and sharps exposures, represent accidental breaks in the skin with needles, scalpels or other sharp objects that have been in contact with a source patient's blood or body fluids.¹ Needle stick injuries are most common occupational hazards health care workers are faced with.^{2,3} These injuries usually occur during activities such as transfusion, blood sampling, needle disposal, waste collection, transferring body fluids and transferring blood from a syringe into another vessels.³ Injuries due to contact with contaminated needles may have serious physical and psychological consequences.^{4,5,6} Around twenty blood borne pathogens can be transmitted through accidental needle sticks, the potentially life threatening are HIV, hepatitis B virus and hepatitis C virus.⁷ A health care worker's chance of contracting HIV after an HIV infected accidental needle sticks injury is one in 250, while the chance of contracting HBV after an accidental needle sticks injury is one in 20. The chances of contracting HCV after an HCV contaminated accidental needle sticks injury average 3.5 in 100.⁸ The incidence of NSI is considerably higher than current estimates, due to gross under-reporting (often less than 50%).^{9,10} According to the World Health Organization, out of 35 million health workers worldwide, about 3 million receive percutaneous exposures to blood borne pathogens each year; two million of those to HBV, 0.9 million to HCV and 170,000 to HIV. These injuries may result in 16,000 HCV, 66,000 HBV and 1000 HIV infections.¹¹ In India, near about 3-6 billion injections are given every year, of which 2/3rd injections are unsafe (62.9%) and the usage of glass syringe is constantly associated with higher degree of unsafety.¹² Authentic data on Needle stick injuries in India are scarce.¹³ In Tripura, very few studies have been conducted on Needle stick injuries among Health care Workers. So the present study is an important one as it was aimed at assessing the magnitude of Needle stick injuries among Health care workers and reporting of needle injuries in Tripura Medical College & Dr. BRAM Teaching Hospital.

II. Materials & Method

A Hospital based Cross – sectional study was conducted at Tripura Medical College & Dr. BRAM Teaching Hospital from May 2016 – September 2016 among Healthcare workers including doctors, nurses, laboratory personnel's, and MBBS students, Nursing Students and supporting staffs (six groups). A Sample Size was calculated to 120 by $4pq/l^2$ formula assuming 50% of health care Personnel had occupational exposure to

blood or blood products during their work and taking 10% absolute precision and 95% confidence level. 20 participants were included from each group. Purposive sampling procedure was used in the present study. Data were obtained from those who were present at time of data collection and given written consent. Any injuries/prick with a needle or other sharp object during use of that object for patient care in last 6 months was taken as an operational definition for needle stick injuries. A Pre tested – structured questionnaire, having 2 (two) sections was used for data collection. Section 1 (one) was contain questions related with personal and occupational data, section 2 (two) about exposure of needle injury, types and reporting. Ethical permission was obtained for this study from the ethical committee of Tripura Medical College & Dr BRAM Teaching Hospital. Data were entered and analyzed by using Microsoft Excel 2007.

III. Results

In the present study the calculated sample size was 120. The mean age of the study participants were 34.33 with standard deviation of 10.66. Age of the majority study participants in this study were under 25 years (33.3%). Majority of the participants were female (58.3%). Majority were studied up graduate level (44.2%). Majority (78.3%) of the participants were working as a health care worker for 10 years at the time of this study. Majority (91.7%) participants were from Hindu community. The prevalence (table no. 1) of needle stick injury in the present study found to be 76.7%. The nursing staffs (table no.2) were more (21.7%) exposed to needle stick injury. Majority of the needle stick injury due to injection needle (82.60%) and occurred during day time (83.70%). Finger was the most common site (90.22%) site for injury and most of the injury (40.21%) occurred during blood drawing. Majority (56.52%) of the participants did not report after needle stick injury to the authority.

Table no. 1: Showing the Prevalence of needle stick injury (n = 120)

Needle stick injury	Frequency	Percentage
Yes	92	76.7
No	28	23.3

Table no. 2: Showing the types of needle tick injuries and post injury reporting (n = 92)

Types of needle tick injuries and post injury reporting	Frequency	Percentage
Occupation		
Doctor	16	17.4
Nursing staff	20	21.7
Laboratory personal	18	19.6
MBBS Student	9	9.8
Nursing student	18	19.6
Supporting staff	11	12
Type of needle stick injuries		
Injection needle	76	82.60
Suturing needle	15	16.40
Lumber puncture needle	1	1
Timing during injury		
Day time	77	83.70
Night time	15	16.30
Site of injury		
Finger	83	90.22
hand	9	9.78
Procedure performing during injury		
Giving IV		
Suturing	19	20.65
Blood drawing	15	16.30
Recapping	37	40.21
	21	22.83
Reporting after injury		
Yes	40	43.48
No	52	56.52

IV. Discussion

In the present study the prevalence of need stick injury was found to be 76.7%. Others studies conducted in India and abroad has shown the variation of prevalence from 32.75% to 83.07%.¹⁴⁻²² It may be due the variation of operational definition used. In the present study it was observed that nursing staffs were more (21.7%) exposed to needle stick injury than other health workers. Similar kind of result has been seen in others study conducted Mumbai¹⁴, Saudi Arabia¹⁵, Delhi^{17,18}. But study conducted in Bareilly²⁰ showed that nursing students and OT technicians has got the highest occurrence of needle stick injury. Injection needle (82.60%) followed by suturing needle (16.40%) was most common cause of injury in our study. Similar kind of result has

been observed in other studies also^{17, 20, 22}. Finger was the common site (99.22%) of injury in our study. Study conducted in Mumbai¹⁴ has shown that index finger was the most common site of needle stick injury. In the present study it was observed that needle stick injury commonly occurs during blood drawing. Similar kind of result seen in other studies^{13,15}. But some studies shown that commonly injury occurs during recapping¹⁹, IV injection²⁰ and IM Injection²². Less than half (43.48%) of the participants in this study did not report to the authority after injury. Others studies has showed variation of reporting after injury, starting from 8.3%¹⁶ to, 53.85%¹⁸.

V. Conclusion

The prevalence of the needle stick injury found to be 76.7% in the present study which is quite high. Nursing staffs were more prone for needle stick injuries. So, more emphasis should be given to the regular training/workshop of the health workers on needle stick injury, proper reporting of needle stick injury, Universal Precaution guidelines and proper use of safety devices during performing of procedures.

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