



Knowledge, Attitude, and Practices towards Needle Stick Injuries among Students and Staff in a Tertiary Medical Centre in Chennai, Tamil Nadu, India

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Background: Needle stick injuries are one of the greatest fears that revolves around the health care workers all over the world, and the majority of them are avoidable by following proper precautionary methods in handling the devices. Even though, by following the precautionary methods, a few accidents may happen a few times and thus resulting in a needle stick injury. The aim of our study was to assess the knowledge, attitude and practices towards Needle stick injuries among students and staff in a tertiary medical centre in Chennai, Tamil Nadu, India

Objectives: To assess the knowledge, attitude, practices about needle stick injuries among students and staff in a tertiary medical centre in Chennai, Tamil Nadu, India.

Materials and Methods: This descriptive cross-sectional study was conducted in Saveetha Medical College and Hospital.

Our study included students and staff of the institution, irrespective of their age and sex. Data collection was carried out using a standardized questionnaire.

Results: 62.1% of the participants know the last universal precaution guidelines of needle stick injuries management. 83.3% are fully vaccinated with anti-HBV. 70.9% always use gloves when deal with needles. 14.3% had Needle stick Injury. 40.9% strongly believe that needle stick injury can be prevented. Since adequate awareness is created by the institution, participants in this study have higher knowledge, attitude and practices when compared to reference studies.

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Keywords: Needle stick injuries; safety of health care workers; post exposure prophylaxis.

1. INTRODUCTION

Needle stick injuries are one of the greatest fears that revolves around the health care workers all over the world, and the majority of them are avoidable by following proper precautionary methods in handling the devices. Even though, by following the precautionary methods, a few accidents may happen a few times and thus resulting in a needle stick injury. Since many dangerous viruses like Human immunodeficiency virus, Hepatitis B and Hepatitis C viruses and much more deadly organisms can be transmitted via needle stick injury, each and every healthcare worker should be educated on the protocol to be followed after a needle stick injury to avoid those deadly complications caused by the organisms. Statistically, two million needle stick injuries happen each year [1]. In India, the prevalence and frequency of needle stick injury ranges from 61 % to 79.5% and 2.3 to 4.5 per HCW per year respectively [2]. These numbers demand us to form a strategy to protect our health care workers.

1.1 Objectives

The aim of our study was to assess the knowledge, attitude and practices towards Needle stick injuries among students and staff in a tertiary medical centre in Chennai, Tamilnadu, India.

3. RESULTS

2. MATERIALS AND METHODS

This descriptive cross-sectional study was conducted in Saveetha Medical College and Hospital.

The study was conducted in the year 2021 from January to March, and data were analysed later.

All the information provided by the participants will remain confidential and will not be disclosed before or after publication.

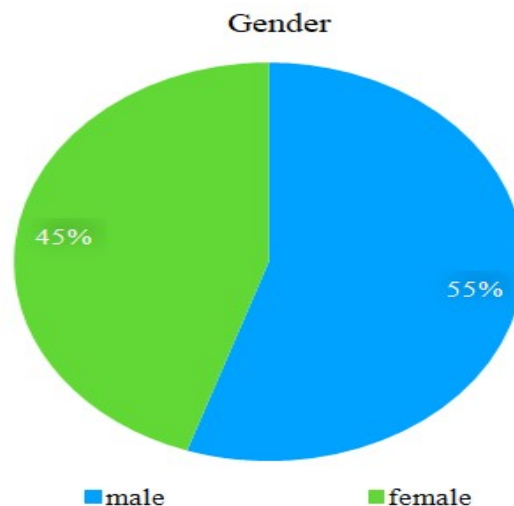
Our study included students and staff of the institution, irrespective of their age and sex during the study period. Participants were included on a volunteer basis.

Those people who were not willing to participate and people who were not a member of the institution were excluded from the study.

Total of 406 participants were included in the study.

Data collection was carried out using a standardized questionnaire.

Data analysis was carried out with statistical package for scientific solutions (SPSS) version 22.0

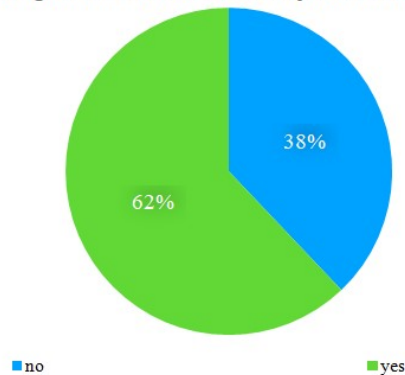


Specialty	MBBS Student	83.3%	(n) = 338
	Doctor	3.4%	14
	NURSE	13.3%	54
Know the last universal precaution guidelines of needle stick injuries management	Yes	62.1%	252
	No	37.9%	154
Main source of information about needle stick injuries	College curriculum	38.4%	156
	Hospital	49.8%	202
	Media	4.9%	20
	Training course	6.9%	28
Hepatitis B virus vaccination	Fully vaccinated	83.3%	338
	Did not complete the vaccination	14.8%	60
	Not vaccinated	2%	8
Use gloves when deal with needles	Always	70.9%	288
	Most of the time	15.3%	62
	Sometime	6.4%	26
	Rarely	4.4%	18
	Never	3%	12

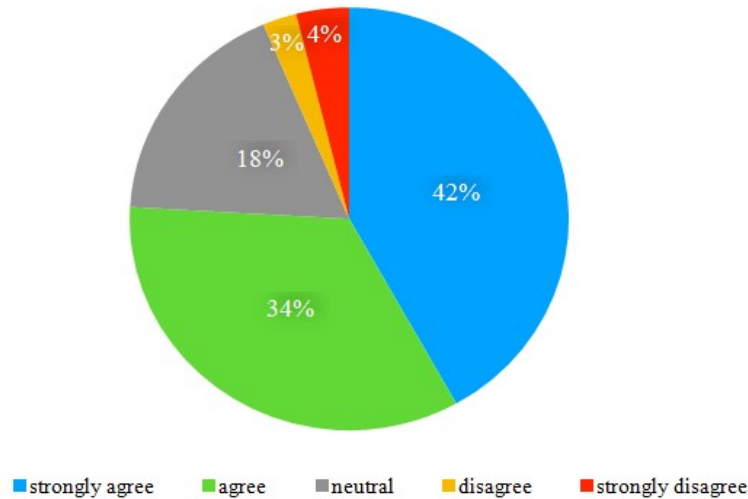
Knowledge and Attitude

Heard about the term post exposure prophylaxis	Yes	93.1%	n = 378
	No	6.9%	28
Main source of information about post exposure prophylaxis	College curriculum	52.7%	214
	Hospital	40.9%	166
	Media	3%	12
	Training course	3%	12
	Other	0.5%	2
If you have a needle stick your immediate action will be	wash your hand with Soap only	5.4%	22
	wash your hand with Soap and water	43.3%	176
	wash your hand with Antiseptic solution	47.8%	194
	Do nothing	3.4%	14
Patient care is more important than the safety of health care workers	Strongly disagree	25.6%	104
	Disagree	27.1%	110
	Neutral	23.2%	94
	Agree	14.3%	58
	Strongly agree	9.9%	40
All sharps injuries at work should be reported immediately	Strongly disagree	3%	12
	Disagree	3.9%	16
	Neutral	15.3%	62
	Agree	32%	130
	Strongly agree	45.8%	186
I think needle stick injury is preventable	Strongly disagree	3.9%	16
	Disagree	2.5%	10
	Neutral	17.7%	72
	Agree	34%	138
	Strongly agree	41.9%	170

Know the last universal precaution guidelines of needle stick injuries management



I think needle stick injury is preventable



Practice			
Have you ever had Needle stick Injury	Yes	14.3%	58
	No	85.7%	348
If yes, report your injury to your supervisor?	Yes	74.6%	88
	No	22%	26
	NSI was outside the hospital	3.4%	4
If yes, Did you Wear gloves at time of NSI	Yes	73.3%	88
	No	26.7%	32
If yes, When did you receive post exposure prophylaxis after NSI from HIV positive patient the procedure was	Within first 72 hours	82.1%	92
	After first 72 hours	17.9%	20
	blood sampling	50%	54
	suturing	18.5%	20
	Giving injection	16.7%	18
	IV Cannulation	9.3%	10
	Other	3.7%	
	All the above	1.9%	

4. DISCUSSION

The research was conducted in Saveetha Medical College and Hospital in the year 2021 from January to March. Total of 406 candidates participated in the study out of which 55.2% were males and 44.8% were females. This study was done in a training institution. The Rationale of this study is to find out the awareness the students have in this institution, as the students are exposed early as first year according to the current revised curriculum in India. This requires the assessment of all the medical students and staff in the institution. Our study was referred and compared to the study done by Mohamed D. Dafaalla, Asgad suliman, et al. [3], Ullah H et al.

[4], and Goel V et al. [5]. Abadiga M, et al. [6]. In our study 62.1% of the participants know the latest universal precaution guidelines of needle stick injuries management, which is higher when compared to Mohamed D. Dafaalla, Asgad suliman, et al. [3]. In our study 50.2% of the participants attended biosafety course. 22.7% of the participants “always follow” what they had been trained in biosafety course, whereas 54.2% “follow” what they have been trained in the biosafety course. In this study 38.4% of the participants had chosen “the college curriculum” and 49.8% chose “hospital”, 4.9% chose “media” and 6.9% in a “training course” as a main source of information about needle stick injuries. In our study 83.3% were fully vaccinated against HBV,

which is similar when compared to Goel V et al. [5] and higher than the study conducted by Mohamed D. Dafaalla, Asgad suliman et al. [3] were only 65.4% was fully vaccinated .Among the vaccinated candidates, 85.2% had not checked anti-HBs antibodies level; 5.9% have their anti HBsAb levels less than 10mlU/ml; 8.9% have their anti-HB s antibodies level above 10mlU/ml . 70.9% of the candidates always use gloves when they deal with needles in comparison to the study conducted by Mohamed D. Dafaalla, Asgad suliman, et al. [3] in which only 63.6% always use gloves when they are dealing with needles 14.3% of the candidates had needle stick injury.Similar to the study conducted by Abadiga M et al. [5]; which is quite low when compared to Ullah H et al. [4] (64.9%) and Devaki T et al. [2]; In which of the participants in that study had Needle prick injuries. The reason being, many students have participated in my study and they are in a comparatively less risk for needle prick injuries than health care workers like nurses.

In my study 43.3% of the participants has a knowledge to use soap and water after needle prick injuries; 47.8% has knowledge to use antiseptic solution Which is similar to Ullah H et al. [4] 74.6% had reported their needle prick injury. Which is quite large when compared to Ullah H et a l(10.8%) [4].

During needle stick 50% of the procedure was blood sampling. 73.3% were wearing gloves at the time of NSI. Within the first 72 hours 82.1% received post-exposure prophylaxis after NSI from HIV positive patients which is quite a big difference from the reference article wherein only 66.7% received post-exposure prophylaxis after NSI from HIV positive patients within the first 72 hours 93.1% heard about the term post-exposure prophylaxis. The main source of information for post-exposure prophylaxis was college curriculum.75.4% knows the availability of occupational health services in the hospital. 82% has known the risk of transmitting Hepatitis B virus infection by blood. This in comparison is lower than the reference study.17.7% strongly agree to the fact that they worry about having needle stick injury 9.9 % in our study and 7.6% in the reference study believe Patient care is more important than the safety of health care workers and 25.6% deny Patient care is more important than the safety of health care workers.45.8% in our study and 51% in the reference study supports reporting all sharps injuries at work

immediately. 41.9% think needle stick injury is preventable in this study in comparison only 31.8% strongly believe in the reference study.

5. CONCLUSION

This study is conducted in an educational institution where the work load of both students and staff is high. This includes the risk of needle stick injuries to both staff and students. Due to the introduction of competency based medical education which has a early clinical exposure there is an increased risk for needle prick injuries. Since adequate awareness is created by the institution, participants in this study have higher knowledge, attitude and practices when compared to reference studies.

ETHICAL APPROVAL

The study was done after getting approval from the ethical committee of Saveetha Medical College and Hospital.

CONSENT

Verbal consent was taken from participants prior to the administration of the questionnaire.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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