

Awareness of Needle Stick Injuries among Health Care Personnel

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Abstract: Introduction: Health care workers are at a high risk for developing Needle Stick Injuries (NSI) during routine patient care. Their awareness about the NSI and precautions to be taken are important in preventing NSI and related infections. Aims: The aims of the study were to determine the circumstances and ways in which health care workers sustain NSI and also to determine the awareness of health care workers about NSI. Methods: This descriptive questionnaire based study was done among 261 participants at a tertiary care hospital in Southern India. The results were analysed using frequency, percentage and chi-square test. Results: According to 97% of the participants hypodermic needles, suture needles and lancets were responsible for majority of the NSI. Amongst all the participants, 225 of them had knowledge regarding Universal Precaution Guidelines. Almost three-fourths of them had knowledge on safety devices to prevent NSIs but less than half of them were equipped with knowledge about post exposure prophylaxis. Medical emergency room would be the first point of contact following an NSI according to 67% of the health care workers. About 50% of the participants did not report NSI as it was due to a sterile needle while rest of them did not report as they were unaware of the procedure to do so. More than 94% of the health care workers were of the opinion that attending a CME on needle stick injuries would increase awareness about NSI. Conclusions: The awareness on NSI was found to be high in the present study. The in-hospital training programme on personal/patient safety might have played a role in the high levels of awareness in the study.

Keywords: Needle stick injury; NSI; Health care workers; Post exposure; Vaccination; Precautions

1. Introduction

A needle stick injury(NSI) is defined as “a penetrating wound with an instrument that is potentially contaminated with the body fluid of another person.”

Needle stick injuries constitute a major hazard for the transmission of infections like hepatitis B, hepatitis C and HIV from the patient to the health care worker depending on the viral load of the patient. Various factors play a role in determining the risk of exposure of health care workers to needle stick injuries.

Hence it becomes extremely important and necessary for health care personnel to be aware about the various ways in which they can acquire NSI and thereby follow precautionary measures to prevent NSIs.

2. Need for the Study

This study intends to determine the commonest ways through which health care personnel acquire needle stick injuries, the circumstances under which these occur and to find out the ways to prevent these, by improvements in knowledge, attitude and practice.

Three major considerations are especially relevant in the assessment of potential unsafe injection practices:

- 1) Safety of the injection recipient
- 2) Safety of the health care worker
- 3) Safety of the community

Our study focuses primarily on the second consideration as health care workers are at a very high risk of contracting life threatening infections through needle stick injuries.

To highlight the importance of promoting adequate working conditions and training programs regarding safety precautions and hence avoid transmission of a wide range of infections among health care workers.

3. Objectives

The objective of the study is to determine the level of awareness about needle stick injuries among health care workers and based on the results to implement new modalities so as to prevent needle stick injuries.

4. Materials and methods

Source of Data: Nurses, final year MBBS students, nursing aids, post graduates from various clinical departments and interns in FMMCH, Mangalore.

Type of Study: It is a descriptive study

Duration of Study: 3 months

Sample size: Taking awareness level into consideration, $p=78.4\%$ ⁽⁶⁾
 $n = z_{\alpha}^2 p(1-p) / e^2$

$z_{\alpha}=1.96$ at 95% confidence interval
 $p=78.4\%$ ⁽⁵⁾
 $e=\text{allowable error}=5\%$
 $n=261$

Method (Data collection): It is questionnaire based study.

Selection criteria:

Inclusion criteria: Nurses, final year MBBS students, nursing aids, post graduates from various clinical departments and interns in FMMCH, Mangalore.

Exclusion Criteria: Nurses involved in training their colleagues and juniors regarding needle stick injuries, nursing supervisors.

Data analysis: Frequency, percentage and chi-square test.

5. Results

According to 97% of the participants hypodermic needles, suture needles and lancets were responsible for majority of the NSI. Amongst all the participants, 225 of them had knowledge regarding Universal Precaution Guidelines. Almost three-fourths of them had knowledge on safety devices to prevent NSIs but less than half of them were equipped with knowledge about post exposure prophylaxis. Medical emergency room would be the first point of contact following an NSI according to 67% of the health care workers. About 50% of the participants did not report NSI as it was due to a sterile needle while rest of them did not report as they were unaware of the procedure to do so. More than 94% of the health care workers were of the opinion that attending a CME on needle stick injuries would increase awareness about NSI.

6. Discussion

The WHO Report estimates that 2.5% of HIV and 40% of HBV is result of occupational exposure.⁽¹⁾

A study was conducted among 70 hospital staff and 50 final year medical students. On being asked about the procedure to be followed in the event of a needle stick injury, 88.3% health care workers were aware of the appropriate sequence of events to be followed and to notify regarding it to the appropriate authority immediately.⁽¹⁾ In this study 67.19% of the participants knew about the first contact person following an NSI.

In another study involving 201 nurses of different age groups categorization based on age was done. Risk of needle stick injuries was higher among young nurses with middle professional experience working in surgical department and intensive care units.⁽²⁾

A study was conducted in a 500 bed Kathmandu Medical College involving 70 nurses and paramedical staff of various departments.

Though everyone who participated knew that HIV can be transmitted by NSI, 61% were not aware that hepatitis can be transmitted by NSI. In the same study only 46 workers were aware of the Universal Precaution Guidelines.⁽³⁾ In this study more than half of the participants knew that hepatitis can be transmitted through NSI and more than three-fourths had knowledge regarding Universal Precaution Guidelines.

In South Korea, data was collected from 3079 registered nurses in 60 acute care hospitals by stratified random

sampling method about prevalence of NSI. Approximately 70% of the hospital nurses had experienced needle stick injuries.⁽⁴⁾

A study was conducted involving staff nurses and nursing students at the Republic Hospital of Kaunas to throw light on the factors responsible for needle stick injuries. Among the major factors were inattention or haste (45.9%) and heavy workload (43.2%).⁽⁵⁾

7. Conclusion

The awareness on NSI was found to be high in the present study. The in-hospital training programme on personal/patient safety might have played a role in the high levels of awareness in the study.

8. Conflicts of Interest

Authors have not received any grants from funding agencies

9. Disclosure

Authors have no disclosures to make

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