



NEEDLESTICK INJURIES AMONG NURSES IN A TERTIARY CARE HOSPITAL: A WORK HAZARD OR LACK OF AWARENESS?

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ABSTRACT

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Objectives: The present study addresses this important issue of NSI and aims at determining their occurrence among the nursing staff in Dr Rajendra Prasad Government Medical College (RPGMC) and hospital, Kangra at Tanda (H.P).

Methods: A cross sectional study undertaken amongst the nursing staff of Dr RPGMC and hospital, Kangra at Tanda.

Results: Out of the 164 respondents, 35(21.3%) reported to having one or more NSIs in their career and the maximum of these were amongst the nurses whose work experience was less than five years (13.4%).

Conclusions: The results of this study confirm the importance of the need for an increased awareness of the risk of needlestick injury, the need to provide for the training and education of health-care workers

Key words: Needlestick injury, nurses, Universal work precautions.

“Awareness of needlestick injury in healthcare personnel. Need of the hour!”

INTRODUCTION

Workplace safety is a very important aspect of occupational health practice in many countries. In the health care setting, transmission of disease from patients to health care workers can occur through percutaneous injuries such as accidental needle stick and sharps injuries. Among the healthcare workers (HCWs), Human Immunodeficiency Virus (HIV), hepatitis B, C, and cytomegalovirus are recognized occupational health infections of special importance. Of the 35 million health-care workers worldwide, 3 million experience percutaneous exposure to blood pathogens each year: 2 million are exposed to hepatitis B virus (HBV); 0.9 million to hepatitis C virus (HCV) and 170,000 to HIV.¹ Nurses make up a large cross section of the hospital staff. Because of the environment in which they work, they are at an increased risk of accidental needle stick injuries (NSI). General practice and community nurses have a higher injury rate than some hospital workers. This could be the result of limited access to ongoing training and development. World Health Organization (WHO) estimates that, annually, 21 million individuals acquire a blood-borne infection from poor injection practices. In China, Romania and India it has been estimated that 80% of hepatitis B infections result from reusing syringes.² The total number of needle stick injuries that the average nurse in India experiences is likely to be higher, given the absence of training and protective devices, thus increasing the total exposure to possibly infected blood or body fluids.

Needle stick injury (NSI) means the introduction of blood or other potentially hazardous material by a hollow bore needle or sharp instruments into the body of a healthcare worker during the performance of duty.³ Needle stick injuries can occur while disposing needles after patient care procedures, administration of injections, and handling of dirty linens where needles have been inappropriately discarded. Health care workers who come in contact with medical devices such as sharps including syringes or scalpels are at risk of injuries that can lead to serious blood borne infections.

Because needle stick injuries are often under reported, health care institutions should not interpret

low reporting rate as low injury rate. Injuries recorded through standard occupational reporting systems may underestimate the true injury rate, as much as tenfold.³

The present study addresses this important issue of NSI and aims at determining their occurrence among the

nursing staff in Dr Rajendra Prasad Government Medical College (RPGMC) and hospital, Kangra at Tanda (H.P). This study was conducted because the potential risk of needle stick injuries in Dr RPGMC and hospital, Tanda needs immediate attention. We also want to bring to attention of healthcare workers to the fact that needle stick injuries are not just a 'part of the job' but all needle stick injuries should be reported.

MATERIALS AND METHODS

This was a cross sectional study undertaken amongst the nursing staff of Dr RPGMC and hospital, Kangra at Tanda. A 20-item questionnaire based on Universal work precaution (UWP) guidelines was given to the nursing staff. Frequency of needle stick injuries, its causes, the commonest workplace, and department of staff, responses after injury, prevention practices, vaccination status and awareness about universal work precaution guidelines was assessed.

Data collection involved the simple interviewing technique using a semi-open questionnaire that was filled by the interviewer.

The health care workers were contacted in person and told about purpose of the study and were ensured that their responses shall be kept anonymous. Informed consent was taken from each respondent before conducting the interview.

Needle stick injury was defined as "any cut or prick to the subjects by a needle previously used on a patient is work related and sustained within the hospital premises."

RESULTS

The study was carried out in Dr RPGMC and hospital, Kangra at Tanda in the month of July 2010. The subjects comprised of 164 nurses of the hospital. Out of the 164 respondents, 35(21.3%) reported to having one or more NSIs in their career and the maximum of these were

amongst the nurses whose work experience was less than five years (13.4%). All of these injuries were due to hollow bore needles. The maximum number of NSI was amongst the staff working in the nursery/ neonatal unit.

Information was also elicited regarding the timing of the injury. In ten nurses (8.5%) the injury occurred during the use of the needle. Another 10 (8.5%) nurses reported NSI after use of the needle on a patient. Greater part of injuries 15 (42.8%) occurred during the use on the patient.

The respondents were asked about their Hepatitis B vaccination status. Out of the 164 nurses, 31.7% of them had not been vaccinated (Table 1). The responses to the question "What should you do after the needle stick injury?" are depicted in table 2. Even though it has been told time and again that the practice of recapping the needle should be abandoned, still a large majority of the subjects answered this as a method of disposing off the needle.

Eighteen (10.9%) of the subjects did not have proper knowledge regarding the universal work precautions which are very important to follow in healthcare settings. Some of them also stated "proper recapping of needles" as one of the universal work precautions.

Table 1

Status	N	%
Never vaccinated	52	31.7
Vaccinated	112	68.3

Hepatitis B Vaccination status of the subjects

Table 2

Response	N	%
a) Nothing	-	-
b) Wash with soap/water/antiseptic and	16	45.7
c) Reviewed the serological status of the patient	-	-
d) Both b & c	19	54.3

Immediate response to Needle Stick Injuries

DISCUSSION

In the absence of statistics from India, those from the United States provide some insight into occupational risk of NSIs. Needle stick and other percutaneous injuries are among the most common and avoidable occupational hazards in hospitals. Percutaneous injury

was associated with 89% of documented transmissions of HIV.²

A large majority (21.3%) of the nurses reported having received a NSI in their career, which is a concerning number. The rate of needle stick injury in our study was low as compared to some other studies in North India. A study in rural North India by Sharma et al had found a prevalence of NSI among health care workers ever in working lifetime to be 73%.⁴ Several other studies too have consistently found that a very high proportion of HCWs have received needle stick injuries while performing their work, both in India and internationally.^{5, 6} The low incidence in our study could be due to underreporting of the injuries by the subjects. Another important reason was the lack of awareness among the nurses regarding the universal work precautions. Underreporting of NSI is a common problem in our healthcare setting, though hospital employees are requested to report such incidents.

The rate of needle stick injuries of the present study was somewhat nearer to some studies in teaching hospitals in African countries like 31% in North West Ethiopia⁶, 40% in a study in West Indies⁶ and 57% in the sub-Saharan countries.⁷ This prevalence of needle stick injuries in these hospitals was due to low level of awareness and poor compliance with the universal safety measures. Practices like recapping were still being followed by some of the nurses. This points to inadequate training of HCWs, or their refusal to follow correct procedures. Out of the total subjects, 31.7% of the had not been vaccinated against Hepatitis B. This is a high number and is quite distressing piece of information as Hepatitis B has been reported to be high among unvaccinated medical staff. Therefore, vaccination against Hepatitis B should be given to any person who performs tasks involving contact with blood, blood contaminated body fluids and sharps.³

Wearing gloves is known to be an important line of defense but several of the HCWs had not been wearing them at the time of their injury. The subjects were asked whether they had knowledge regarding universal work precautions and were asked to name any two. Even though many were aware but there were a few who had no knowledge about them. Universal work

precautions or standard work precautions are important to a healthcare worker as it provides them knowledge regarding the various health hazards at their work place and the ways to take preventive measures for their safety.

The health care environment in a tertiary care hospital is a hectic and stressful one, and long duty hours are common. A visit to any government hospital provides a clear picture of the risks faced by nurses. There is a lack of basic protective barriers like gloves and masks, and absolutely no training on universal precautions. It must be ensured that people putting in long hours continuously get to take short breaks in between, to refresh themselves up

Preventing NSIs is the most effective way to protect workers from infectious diseases transmitted by them. Therefore, pre-employment training in health and safety measures must be a part of all courses for prospective healthcare workers. Continuing training programs over time to ensure that HCWs are kept up-to-date and aware of new needle stick policies should be taken up by all health care facilities on a regular basis.

The emotional impact of a needle stick injury can be severe and long lasting, even when a serious infection is not transmitted. The impact is particularly severe when the injury involves exposure to HIV. In one study of 20 health care workers with an HIV exposure, 11 reported acute severe distresses, six quit their jobs, and seven had persistent moderate distress as a result of the exposure.⁸ Other stress reactions requiring counseling have also been reported.⁹

Nurses who are known to be HIV positive face discrimination at the work place. There is a constant threat of loss of employment. They are rejected by their peers and co-workers. They become subjects of humiliating remarks. Their career comes to a full stop and they suffer from severe depression.

CONCLUSION

In conclusion, the results of this study confirm the importance of the need for an increased awareness of the risk of needle stick injury, the need to provide for the training and education of health-care workers in the

reporting of injuries and in standard operating procedures and also to put in place a proper framework to provide support and follow-up of those who sustain needle stick injuries.² Their occurrence can be minimized to a large extent. An awareness program regarding the hazards associated with NSI and its prevention need to be started at our hospital. Especially, the nursing school administrators should include teaching programs for risk reduction in their teaching curriculum during the preclinical years and reinforce during each clinical posting so that in at the time of job the risk of needle stick injuries are reduced among the nursing staff.⁹ Prevention of NSI is the best way to prevent several diseases in health care workers.

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