



NEEDLE STICK INJURY IN HEALTH CARE PROVIDERS - A HOSPITAL BASED CROSS SECTIONAL STUDY

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INTRODUCTION

Occupational accidents are common in any area of work, including hospitals. Practices that control or prevent transmission of infection help to protect clients and health care workers from diseases. Clients in all health care settings are at risk for acquiring infection because of exposure to number and types of diseases. Health care workers can protect themselves from contact with infectious material or exposure to communicable diseases by having knowledge of the infectious process and appropriate barrier protection.^[1] One of the most potentially hazardous procedures that health care personnel face is using and disposing of needles and sharps. A needle stick injury is a penetration of skin by a needle point, but probably also by other piercing instruments.^[2] These problems are a common event in the healthcare environment. These injuries also commonly occur during drawing blood, medication administering, needle recapping and during surgery.^[3] Needle stick injuries present a major risk for infection with hepatitis B virus, hepatitis C virus and HIV.^[4] Sharps include syringe, needle, scalpels, broken glass and other objects contaminated with blood form a source of infection. Health care workers (HCW) worldwide are especially exposed to injury by sharp instruments in the course of their duty. Exposures to sharp injuries and their consequences are highly preventable through simple interventions. Every percutaneous needlestick and sharps injury carries a risk of infection from blood borne pathogens. Yet, these exposures often have been considered "part of the job." Health care workers primarily are exposed to these pathogens via contaminated needle stick and sharps injuries. Hence, it is important that we should fully understand these risks.^[5]

A comprehensive study by the World Health Organization (WHO) in 2004 stated that there is a "compelling case that NSPs substantially and cost effectively reduce the spread of HIV among IDUs and do so without evidence of exacerbating injecting drug use at either the individual or societal level."^[6] The WHO's findings have also been supported by the American Medical Association (AMA), which in 2000 adopted a position strongly supporting NSPs when combined with addiction counseling.^[7,8]

MATERIALS AND METHODS

A study was conducted in a tertiary care hospital. Based on the predetermined inclusion and exclusion criteria a sample size of 100 doctors, staff nurses, ward attendants and sweepers in different wards were taken. A purposive sampling technique and a close ended questionnaire was taken. The health care workers were contacted in person and told about purpose of the study and that their responses shall be kept anonymous. Informed consent

was taken from each respondent before conducting the interview. The inclusion criteria were health care workers in the hospital, both male and female and including those professionals. The data was taken and analysed with a software.

RESULTS

Out of 100 exposed health care workers the maximum number was of ward attendants (55) followed by staff nurses (22), ward sweepers (13%) and others like residents and technicians (5%) respectively. After NSI 100% HCW removed their gloves and washed their wounds with running water then spirit swab then bandaging was done. Maximum number of HBV vaccination status in NSI 55 % unvaccinated, 23% incomplete vaccinated and 22% complete vaccinated.

Exposed HCW	Percentage
Resident	5%
Staff Nurse	22%
Lab technician	5%
Ward attendant	55 %
Ward sweeper	13%

DISCUSSION

Globally, two million health care workers suffer from accidental needle stick injury each year.^[8] In UK, a study showed that 37% needle stick injuries reported at some stage during their career.^[9] In Nepal a survey reported that needle stick injury among health care workers was 70.3%.^[10] In developing countries, where the prevalence of HIV infection is the highest in the world, the number of needle stick injuries is also the highest.^[11] Study revealed that, transitional and developing countries where unnecessary injection is common, the average number of health care injection per person is averagely estimated to be 3.7/year. Generally in developing countries exposure and health impact of NSI are rarely monitored and poorly managed. Universal guidelines have decreased the risks of needle stick injuries over the past 30 years, still these injuries continue to occur, although at a much lower rate.

Consequences of NSI may be serious blood borne diseases like HIV, Hepatitis etc. Factors that increase the risk of exposure to body fluids are failure to adopt universal precautions, not following established a protocol of safety, high-risk procedures that increase the risk of blood exposure such as withdrawing blood, working in the dialysis unit, administering blood, using needles and other sharp devices that lack safety features etc.^[14,15] Almost any microorganism can be transmitted following a needlestick injury, but only a handful of organisms are of clinical concern. The most important organisms that can be acquired after a needlestick injury include HIV, hepatitis B, and hepatitis C.^[10,11] All these three viruses can be acquired by a percutaneous needlestick or splashing of blood on the mucosal surfaces of the body. While HIV primarily affects the immune system, both hepatitis B and C have a predilection for the liver. Tetanus should always be considered when a needlestick injury has occurred, and the patient's vaccination history must be obtained.^[12,13]

In our study, most common NSI cases occurred in ward attendants due to improper disposal of sharps in spite of availability of needle cutter in every ward, followed by staff nurse due to incorrect handling and passing of devices which was consistent with the finding of studies done by Rita *et al.* Mandatory post-exposure testing of healthcare professionals, although theoretically simple, in practice presents complex moral, ethical and legal dilemmas.

CONCLUSION

It was concluded that repeated training programme about prevention of NSIs (appropriate disposal) is required.

Proper immunization for HBV of all HCWs should be mandatory. Proper availability of devices with safety features that reduce the risk of injury should be requested to authorities.

We recommended following to prevent NSIs in ward attendant/ward sweepers:

- Use of puncture proof biobag.
- Use of sharp container for disposal of sharps.
- Transport of biomedical waste should be in a covered trolley.

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