PREVALENCE OF NEEDLE STICK INJURIES AMONG DOCTORS AND NURSES WORKING IN SHEIKH ZAYED HOSPITAL RAHIM YAR KHAN

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ABSTRACT

Background: Needle stick injuries remains potential source of transmission of infections. **Objective:** To determine the prevalence of needle stick injuries among doctors and nurses working in Sheikh Zayed Hospital Rahim Yar Khan. **Methodology**: This cross sectional study was conducted from 1st June to 31stDecember 2014. All the nurses and medical officers who were listed in the medical superintendent office of the Sheikh Zayed Hospital Rahim Yar Khan were included in the study. A structured, self-administered questionnaire was designed to describe the occurrence of needle-stick injuries among respondents. The questionnaire sought information about socio-demographic characteristics such as age, sex, marital status and years of experience. The questionnaire also included information about the frequency of being stuck by a needle or a sharp instrument while at work during the last six months. A yes/no response were used to assess whether the doctor/nurse reported the injury. The participants were asked about the reasons of needle stick injuries and how they managed the incident. Data analysis was performed using SPSS, version 17. The chi-square test was used to assess the association between duration of service and needle stick injuries**. Results**: Total of 308 health care workers (HCWs) participated in this study which included 173 medical officers and 135 nurses. About half of the medical officers were in the age category of 30 to 39 years while half of the nurses in 20 to 29 years of age. Among these HCWs 27.8% medical officers and 25.2% nurses had above 10 years of work experience. Needle stick injury was reported by 22.54% doctors and 37.78% nurses in the past six months and it was found significantly higher among nurses as compared to doctors (p=0.001). Among perceived reasons of needle stick injuries the most frequently reported reason was workload (48.7% doctors, 56.9% nurses) followed by Recapping of needle (30,8% doctors, 21.6% nurses), hurriedness (12.8% doctors, 13.7% nurses) and non-cooperation of patient (7.7% doctors, 7.8% nurses). After needle stick injury only 38.5% doctors and 25.5% nurses washed it with disinfectant. Duration of service was significantly associated with needle stick injury among doctors (p=0.000) and nurses (p=0.000). **Conclusion.** In summary, we conclude that the frequency of Needle stick injury among Health Care Workers is high and duration of service was significantly associated with needle stilck injuries.

Key Words: Needle stick injury, Health care workers, Risk Factors

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INTRODUCTION

Needle stick injury (NSI) is the injury sustained by health care workers (HCW) while providing care to the sick. Occupational health safety for medical practice is an important issue and Needle stick injury remains the potential source for transmission of blood born infection and one of the main safety concerns which need to be addressed for the prevention of various blood borne diseases among Health care workers (HCWs).[1] The risk of transmission depends on the viral load of the infected patient and the quantity of blood injected during injury. Estimated risk of transmission after NSI for HIV ranges from 0.2-2%, for HBV 6-40 % and for HCV 2.7-10 %.[2,3] Reported activities related to the majority of NSIs are administering injections, drawing blood, recapping needles, and disposing of needles, handling trash and dirty linen and transferring blood or body fluids from a syringe to a specimen container.[4] In addition, poor knowledge and practices about the risk and hazards of NSIs substantially contribute the probability of NSIs.[5] It is estimated that 6–8 million NSIs occur each year in developed countries, like USA and 16 million are reported annually in resource countries.[6] There are no hospital based guidelines for pre and post exposure prophylactic measures.[7] Further, when these incidents occur, they are not reported to concerned authorities, reflecting the lack of awareness among concerned authorities and HCW.[8,9] Although up to 90% of these injuries occur in developing countries, the number of studies addressing this serious issue is less compared to developed nations.[10] This study was aimed to estimate the prevalence of needle stick injuries among doctors and nurses working in Sheikh Zayed Hospital Rahim Yar Khan.

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METHODOLOGY

This cross sectional study was conducted from 1st June to 31st December 2014. All the healthcare workers (nurses and medical officers) who were listed in the medical superintendent office of the Sheikh Zayed Hospital Rahim Yar Khan were included in the study. A structured, self-administered questionnaire was designed to describe the information of occurrence of needle-stick injuries among respondents. The questionnaire sought information about socio-demographic characteristics such as age, sex, marital status and years of experience. The questionnaire included information about the frequency of being stuck by a needle or a sharp instrument while at work during the last six months. The definition of a needle-stick injury was a percutaneous injury of any depth caused by a small-, medium- or large-bore hollow syringe needle or a sharp instrument which did or did not involve visible blood at the time of injury. A yes/no response were used to assess whether the doctor/nurse reported the injury. The participants were asked about the reasons of needle stick injuries and how they managed the incident. All nurses and medical officers were visited in their work place and verbal consent to participate was obtained. The respondents were assured about confidentiality. Numerical variables were described using mean and standard deviation (SD). All categorical variables were described using frequency tables. Data analysis was performed using SPSS, version 17. The chi-square test was used to assess the association between duration of service and being injured.

RESULTS

A total of 308 health care workers (HCWs) participated in this study which included 173 medical officers and 135 nurses. About half of the medical officers were in the age category of 30 to 39 years while half of the nurses in 20 to 29 years of age (Table I).

Among these HCWs 27.8% medical officers and 25.2% nurses had above 10 years of work experience and 41% of medical officers were working for less than five years (Table II).

Table I: Age distribution of the respondents

Age (Years)	Doctor No (%)	Nurse No (%)
20-29	54 (31.2%)	79 (58.5%)
30-39	81 (46.8%)	38 (28.1%)
40-49	22 (12.7%)	12 (8.9%)
50-59	16 (9.3%)	06 (4.5%)
Total	173 (100%)	135 (100%)

Table II: Distribution of service duration of respondents

Duration (Years)	Doctor No (%)	Nurse No (%)
1-5	71 (41.0%)	59 (43.7%)
6-10	54 (31.2%)	42 (31.1%)
>10	48 (27.8%)	34 (25.2%)
Total	173 (100%)	135 (100%)

Needle stick injury was reported by 22.54% doctors and 37.78% nurses in the past six months (Table III). Among perceived reasons of needle stick injuries the most frequently reported reason was workload (48.7% doctors, 56.9% nurses) followed by Recapping of needle (30,8% doctors, 21.6% nurses), hurriedness (12.8% doctors, 13.7% nurses) and non-cooperation of patient (7.7% doctors, 7.8% nurses.

Table III: Frequencies of needle stick injury (NSI) among respondents within last six months

NSI	Doctor No (%)	Nurse No (%)
Yes	39 (22.54%)	51 (37.78%)
No	134 (77.46%)	76 (62.22%)
Total	173 (100%)	135 (100%)

Squeezing of blood was performed by 48.7% doctors and 54.9% nurses after needle stick injury. Injury was ignored by 5.1% doctors and 5.9% nurses. After needle stick injury only 38.5% doctors and 25.5% nurses washed it with disinfectant. Duration of service was significantly associated with needle stick injury among doctors (p=0.0000) and nurses (p=0.0000).

DISCUSSION

Occupational health safety for medical practice is an important issue and Needle stick injury remains the potential source for transmission of blood born infection and one of the main safety concerns which need to be address for the prevention of various blood

borne diseases among HCWs.[11] Needle stick injury presents the greatest risk for medical personnel. Most people at risk for occupational exposures are in developing countries where there is paucity of reporting standard protocols.[12] In addition; HCWs suffer from significant anxiety and emotional distress following a Needle Stick Injury. Total of 308 health care workers (HCWs) participated in our study which included 173 medical officers and 135 nurses and about half of the medical officers were in the age category of 30 to 39 years while half of the nurses in 20 to 29 years of age. In our study about one fourth of medical officers (27.8%) and nurses (25.2%) had above 10 years of work experience. Needle stick injury is an important indication of poor injection safety practices by health workers. The prevalence of Needle stick injury found in our study was 22.54% among doctors and 37.78% nurses in the past six months and it was found significantly higher among nurses as compared to doctors (p=0.001). These findings are consistent with the study conducted by Gillen M et al. in which it was reported that sustained higher number of needle stick injuries than physcians.[13] It was observed that most frequently reported reason perceived by the nurses and doctors in our study was workload which is comparable with the findings of study conducted by Aslam M, et al.[14] Regarding the management after needle stick injuries our study results showed that squeezing of blood was performed by 48.7% doctors and 54.9% nurses. Injury was ignored by 5.1% doctors and 5.9% nurses and only 38.5% doctors and 25.5% nurses washed the site of injury with disinfectant. Similar findings were seen in a study conducted by Muralidhar S et al, in tertiary care hospital of India.[15] Our study results revealed that duration of service was significantly associated with needle stick injury among doctors (p=0.0000) and nurses (p=0.0000) which is similar to the findings of Hanafi MI et al, in which they observed that health care workers with more than five years of work experience were significantly less likely to be injured.[16]

CONCLUSION

We conclude that the frequency of needle stick injuries among healthcare workers is high. We would like to recommend that in all health care settings, record keeping and reporting of sharp injuries should be considered as an essential part of infection control activity. Infection control teaching and training should be an integral part of the curriculum of all disciplines including medical, dental, nursing as well as for any institute providing training to paramedics.

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