

AWARENESS OF NEEDLESTICK INJURIES AMONG THE DENTAL HEALTH PROFESSIONALS AT LAHORE MEDICAL & DENTAL COLLEGE

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ABSTRACT

Health care associated transmission of blood borne diseases has always been an important public and medical concern worldwide. Objective of this study was to assess the degree of awareness of needle stick injuries among dental health professionals working at LMDC. Dental students during clinical training are at high risk for needle stick injury while administering local anesthesia. This fact has been known for the past few decades to be the founder of several blood borne diseases such as Hepatitis B (HBV), C (HCV) and AIDS (HIV). Several studies have reported the high incidence of such practice among dental students and graduates.

Study was conducted on 139 Dental Health Professionals at the Lahore Medical and Dental College in the year 2010 based upon questionnaire developed by a team of senior faculty members.

Exposure to needle stick injury was found among 63(45%) subjects. 118 (85%) of Dental health professional were found to be aware of precautionary measures and first aid management for a needle stick injury respectively. The number of Dental Health Professionals who had been vaccinated for Hepatitis B (HBV) 121 (87%) and those who had never been vaccinated were 18 (13%). Among non-vaccinated group 90% were Dental assistants.

Proper work practices and continued Education seminars and workshops regarding awareness of needle stick injuries have the prime importance of creating awareness. The prevention and management protocol for such injury should be displayed in the clinical departments of all institutions. These steps will assure safe practicing methodology among dental health professionals.

INTRODUCTION

Health care associated infection has always been an important public and medical issue worldwide. Hazards of transmission of diseases by the use of needles augmented the apprehension amongst the health professionals and society.^{1,2,3} Most of dental procedures are being performed under local anesthesia so risk increased by frequent use of local anesthesia needles. This has been known for the past few decades to be the founders of several blood borne diseases such as Hepatitis B (HBV) and C (HVC) and AIDS (HIV)^{4,5}. Several studies have reported the high prevalence of such practice among dental students and dental surgeons. Dental students in training have the greatest

risk of exposure to blood borne pathogens, because of their numerous encounter involving the use and disposal of sharp instruments and predisposition increased while learning new technical skills. The hazards of injury is further compounded by the high prevalence of hepatitis B virus (HBV), hepatitis C virus (HCV) and human immuno-deficiency virus (HIV) among dental surgeons who performed surgical procedures particularly inter-maxillary fixation to treat fractures of the jaws. Studies have proved that in teaching institutions 20 to 38% of all procedures involved exposures to HIV, HBV and HCV.^{8,9,10} However, strategies during last decade used to decrease occupational exposure and transmission of diseases including hepatitis B vaccination and implementation of precautionary measures

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has been succeeded to reduce the frequency.^{6,7} In 1987 health screening program, American dental association reported average rate of 11 needle stick injuries to each individual per year which were reduced to 3 per annum in 1993.⁴

METHODOLOGY

The present study was conducted on 139 Dental Health Professionals working at the Lahore Medical and Dental College in the year 2010. The study was based upon questionnaire that was developed with the help and guidance of team of senior faculty at LMDC. The subjects of the study were dental students, dental and para-dental staff. The questionnaire was composed of close ended questions designed in accordance to occupational safety and infectious disease guidelines. It inquired name, age / sex, designation and department of the subjects. It also revealed exposure of the subjects to the needle stick injury (Yes/ No). If answer was “yes” then it required the number of exposure per year and mechanism of the injury like Local Anesthesia Administration, Needle Recapping, Needle Exchange, and Sharps Disposal, or others. Subjects were also asked few questions regarding precautionary measures necessary to prevent a needle stick injury and whether he or she was aware of the first aid management of a needle stick injury. In the end it also inquired about vaccination status against HBV.

RESULTS

The overall response rate was 100%. Graduates were 30 males and 33 females, and Dental students were 25 males and 30 females and dental Assistants were 21 males. (Fig 1)

Among the subjects the numbers of exposures to needle stick injuries were 63 (45%) and in negative were 76 (55%). (Fig 2)

The response to the mechanism of the needle stick injury was as follows: Needle Recapping (33), Needle Exchange (17), During L.A Administration (09), Sharps Disposal (12), others (14). (Fig 3)

The number of subjects aware of precautionary health measures to needle stick injuries were 132 and those who were unaware were 07. (Fig 4)

The number of subjects who were aware of first aid management of a needle stick injury was 118 and those who were unaware were 21. (Fig 5)

The subjects who had been vaccinated to HBV were 121 and those who were not were 18. (Fig 6)

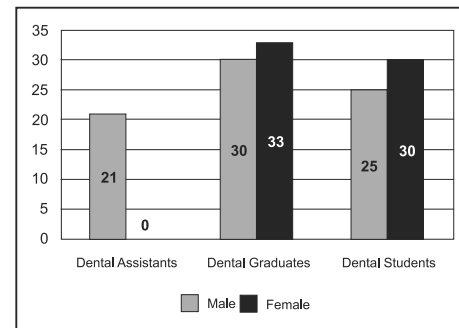


Fig 1: Subjects distribution

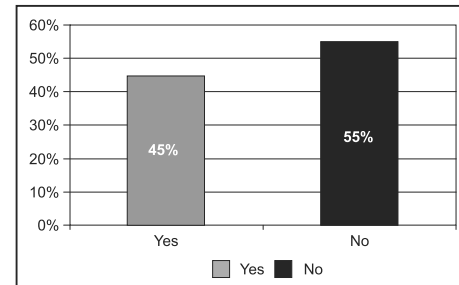


Fig 2: Exposure to needle stick injury

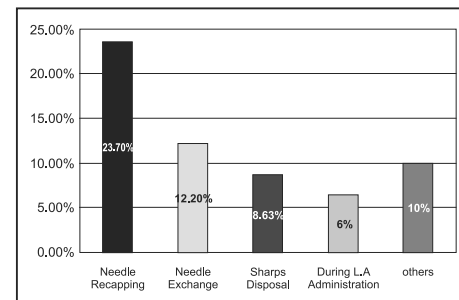


Fig 3: Mechanism of injury

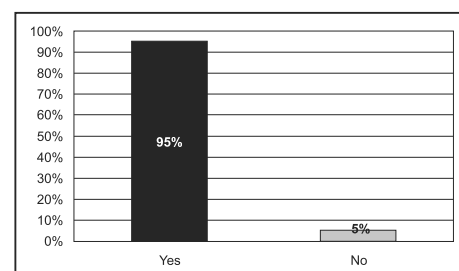


Fig 4: Awareness of precautionary measures necessary to prevent needle stick injury

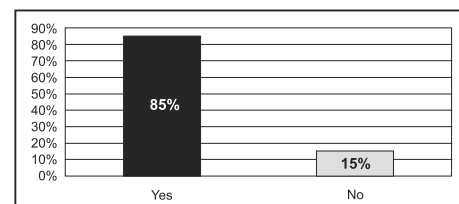


Fig 5: Awareness of first aid management of needle stick injury

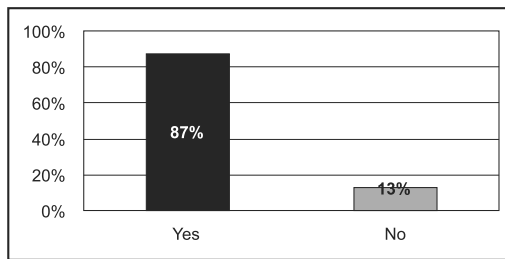


Fig 6: Vaccination results of subjects

DISCUSSION

Needle stick injuries pose significant risk to dental health care professionals. In this study, 45% subjects had exposure to needle stick injury and this percentage is less than reported in other studies.⁴ The under reporting is an established fact because, “HIV, HBV and HCV” infections have implications for personal relationships, future employment and insurance coverage. Contrary to that on time reporting of the injury to an employee health service enables counselling regarding the risk of exposure and prevention of secondary transmission, including possible transmission to patients. Average 3 exposure per person was reported in this study and needle recapping was found the most common mechanism of injuries. These results are consistent to literature.^{11,12} System based strategies such as careful handling and passing of sharp instruments and needles, a safe zone in the operative field for placing sharp instruments, either avoidance or implementation of scoop technique for needle recapping or use of safety devices for needle recapping and innovative alternative surgical techniques such as sharpless surgery and the use of blunt tip needles are associated with a reduced risk of needle stick injury.^{10,11} Hand free technique for transfer of sharps is quite effective.¹² Most of the responses indicate that hurry during procedures was the leading cause of their injury and this has also been found that majority of such injuries were self inflicted. 95% subjects were aware of precautionary measures and 85% were known to first aid management but most respondents were not aware with detailed subsequent management. The reason for high rate of awareness regarding precautionary measures in this study was due to regular conduction of seminars and workshops at LMDC and firm implementation of cross infection control strategies for not only staff but also for students in training. 87% dental health care providers were vaccinated but 96% dental assistant were not immune against hepatitis B. The constraint of this study was that recall biased may have occurred in these responses. More stress should be given on para-

dental staff to reduce frequency of needle stick injury because they are important component of dental health care professionals.

CONCLUSION

On the basis of these findings, training programs should be provided to facilitate prompt reporting and curricula that include specific instructions on safe techniques. Strategies to reduce such injuries in a systematic way and appropriate medical care can be delivered in time. Proper work practices, Continuous education through seminars and workshops regarding awareness of needle stick injuries should be conducted among dental health professionals in order to assure safe practicing methodology during dental practice. Standards of procedure to maintain infection control measures should be displayed in the dental departments and sterilization area.

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