

Knowledge Attitude And Practice Of Dentists Towards Prophylaxis After Exposure To Blood And Body Fluids

Research Article

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Abstract

Post-exposure prophylaxis plays an important role in prevention of blood and borne diseases after occupational exposures. This study was aimed at assessing the level of knowledge, attitude and practice of dental students on prophylaxis after exposure to blood and body fluids. A self administered questionnaire consisting of 10 questions regarding knowledge attitude and practice regarding prophylaxis after exposure to blood and body fluids. Data was collected through google forms. responses were analysed and statistical data is represented as pie charts. In the present study 48% of the participants know the duration of PEP to be taken. 96% of the students agree to the fact that PEP reduces the likelihood of being HIV positive. 68% of the participants did not attend any training program regarding PEP. Knowledge, attitude and practice of dentists working in Saveetha dental college towards prophylaxis after exposure to blood and body fluids is adequate but there are knowledge gaps. Interventions to raise their knowledge are therefore recommended.

Keywords: Body Fluids; Dentist; Occupational Exposure; Post Exposure Prophylaxis.

Introduction

Occupational exposure is defined as contamination of a health care worker (HCW) with patient's blood or body fluids during his/her professional practice. These exposures, which are common among HCWs, include sharp injuries, mucocutaneous contamination, and bites. These exposures are an important hazard for HCWs because they can result in the transmission of blood-borne pathogens such as hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). Although avoiding exposures is very important for preventing transmission of the pathogens, post-exposure prophylaxis (PEP) is also an essential element of programs to stop infection and is vital for HCWs' safety. [1]

PEP includes procedures that have to be done after exposure to patients' blood and body fluids to stop probable microorganism

transmission. [1] These procedures include immediate washing of the exposed area; determination of risk associated with exposure; evaluation of the source patient for acquired immune deficiency syndrome (AIDS), HBV and HCV; injection of hepatitis B vaccine and immunoglobulin; consumption of antiretroviral drugs; and evaluation and follow from the exposed HCW. [2] Each of those procedures is indicated under a particular circumstance and a number of other studies have shown their efficacy. [3] The study of Cardo, et al, showed that consuming zidovudine after injury with a needle contaminated by HIV-positive patient's blood reduced the risk of HIV transmission by approximately 80%. [3] After exposure to HBs-Ag+ blood, injecting either hepatitis B vaccine or immunoglobulin alone can reduce the risk of HBV infection by nearly 70%, according to the Center for Disease Control and Prevention (CDC) guidelines. [1]

Dentists are more prone to occupational exposure because of close contact with the patients' oral cavity, using sharp instru-

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Received: May 08, 2021

Accepted: June 16, 2021

Published: June 25, 2021

Citation: Abhishek Naram, Balakrishna.R.N, Deepak.S. Knowledge Attitude And Practice Of Dentists Towards Prophylaxis After Exposure To Blood And Body Fluids. *Int J Dentistry Oral Sci.* 2021;8(6):2873-2878. doi: <http://dx.doi.org/10.19070/2377-8075-21000583>

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ments and operating with high speed rotary instruments, which produce infectious aerosols. [4, 5] According to a previous study, 73% of dental students at Shiraz University of Medical Sciences had been injured with a sharp instrument a minimum of once during their clinical practice.[6] In London, only 76% of junior doctors were aware that PEP would reduce HIV transmission. [7] In Scotland, 16% of HCWs had not been immunized against HBV, although they were in danger of blood and body fluids exposures. In Brazil, 44% of dentists after sharp injury and 14% of them after mucosal contamination with potentially infectious fluids investigated whether the source patient was carrier of blood-borne viruses or not, and only 11% of them sought medical aid after occupational exposure. [8]

Recently, there's an increasing attention towards occupational hazards in HCWs and so as to reduce the hazards, several protocols and guidelines are established in developed countries. However, to the best of our knowledge, there's no precise information on the dentists' behavior after blood and body fluids exposure in Iran. To enhance the HCWs safety and establish local guidelines, more information is important. Previously our team has a rich experience in working on various research projects across multiple disciplines The [9-23]. The Aim of the study is to assess the knowledge, attitude, and practice of dentists working in saveetha dental dental college regarding prophylaxis after exposure to blood and body fluids.

Materials And Methods

This was a cross-sectional study conducted among dental students undergoing training in saveetha dental college and hospitals. Data were collected by means of a self-administered questionnaire consisting of 10 closed ended questions. The survey was prepared in the form of google forms and was sent to potential responders.

100 people have responded to the survey.The questionnaire consisted of questions regarding knowledge about prophylaxis after exposure to blood and body fluids Convenient sampling method was used for data collection. The responses were presented as percentages. Data was tabulated and statistical analysis was done using spss software.

Results And Discussion

From the results [fig1] 96% of the students said they evaluate general health and medical history before dental care. [fig2] When asked if they wear protective equipment while treating patient 92% of the participants wear protective gear while treating patients. [fig3] 79% of the students were aware of the PEP whereas 21% of the students aren't aware of the PEP. [fig 4]72% of the study participants know when PEP is indicated whereas the other 28% of the participants do not know about it. [fig 7] 36% of the study population does not know the preferable time to take PEP. however [fig 9]70% of the participants know the duration to which PEP to be taken and 30% of the participants doesn't know the duration of the pep to be taken. [fig 5] 59% of the participants know the guidelines for taking pep whereas other 41% do not know about it.[fig 6] 97% of the participants agree with the fact that PEP reduces the likelihood of being HIV positive. [fig 8] when asked regarding maximum delay for taking PEP majority of the participants responded as 72 hours. [fig 10] 68% of the participants did not attend any training regarding post exposure prophylaxis whereas 32% have attended.

HIV and HBV constitute a serious public health concern, and occupational exposure of HCWs to these viruses poses a threat to healthcare delivery systems in resource-limited settings. Standard precautions have been advocated by the Centre for Disease Control (CDC, USA) as a means to reduce occupational exposures

Figure 1. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked “Do you evaluate your patients general health and past medical history before dental care” 96 have responded yes and 4 have responded no. Pearson chi square test was done and it gave a p value was 0.614 which is >0.05 hence the results were not statistically significant implying no association between the gender and responses.

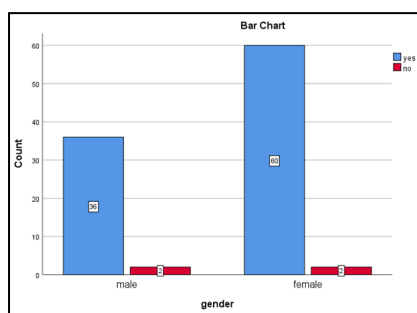


Figure 2. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked “Do you wear protective wear while treating patient’s” 92 have responded yes and 8 have responded no. Pearson chi square test was done and it gave a p value was 0.976 which is >0.05 hence the results were not statistically significant implying no association between the gender and responses.

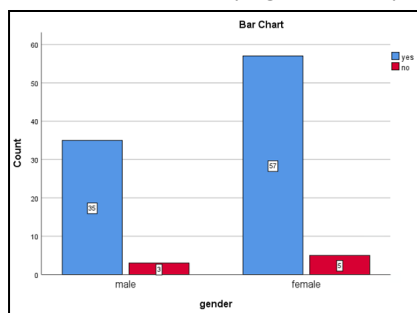


Figure 3. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked “Do you know what is PEP” 79 have responded yes and 21 have responded no. Pearson chi square test was done and it gave a p value was 0.992 which is >0.05 hence the results were not statistically significant implying no association between gender and responses.

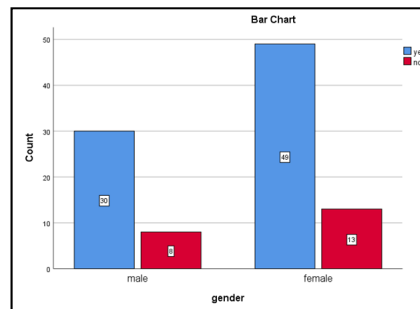


Figure 4. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked “When do you think PEP should be indicated” 71 have responded to needle stick injury at work place and 9 have responded when patient is at risk of hiv . Pearson chi square test was done and it gave a p value was 0.343 which is >0.05 hence the results were not statistically significant implying no association between gender and responses.

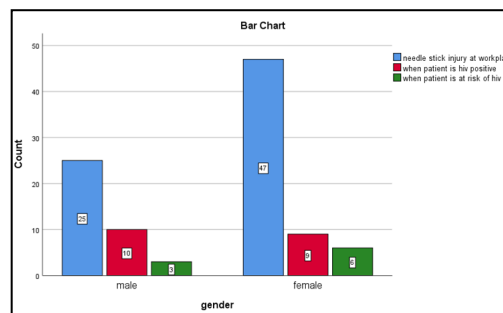


Figure 5. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked “Do you know about the PEP guidelines” 59 have responded yes and 41 have responded no. Pearson chi square test was done and it gave a p value was 0.860 which is >0.05 hence the results were not statistically significant implying no association between gender and responses.

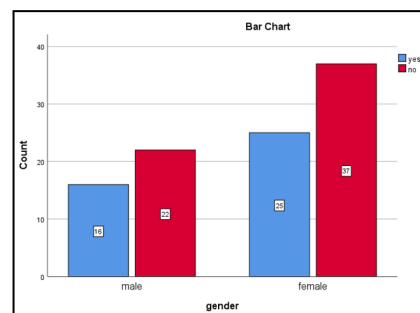
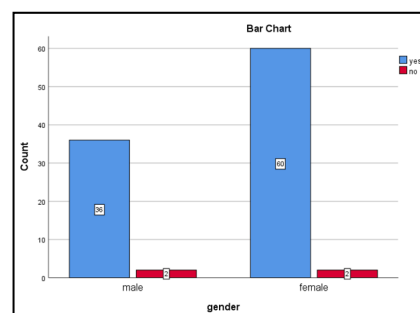


Figure 6. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked Do you think PEP reduces the likelihood of being HIV positive” 96 have responded yes and 4 have responded no. Pearson chi square test was done and it gave a p value was 0.614 which is >0.05 hence the results were not statistically significant implying no association between gender and responses.



to HIV and other blood-borne pathogens. [24] In spite of the precautions, occupational exposure still occurs. Therefore, studies relating to knowledge, attitude and practices of HCWs are vital as they help to inform policy formulations on occupational PEPs against blood-borne pathogens, such as HIV and HBV.

This study shows that 77% of the participants have heard about PEP for HIV. This finding is higher than similar studies conduct-

ed in India. In the institution where the present study was done, there is an infection control unit where incidences of occupational exposures are reported and PEP Instituted. But, updates or seminars on standard precautions and PEP aren't routinely finished the HCWs.

In this study, 73% of respondents had knowledge of the best time for the initiation of PEP, which is higher compared to that

Figure 7. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked preferable time for taking PEP. majority of the participants said “within an hour” followed by “after 6 hours” Chi square test to determine the association of response with gender gave a p value of 0.718 which was >0.05 hence the results were not statistically significant implying no association between gender and responses.

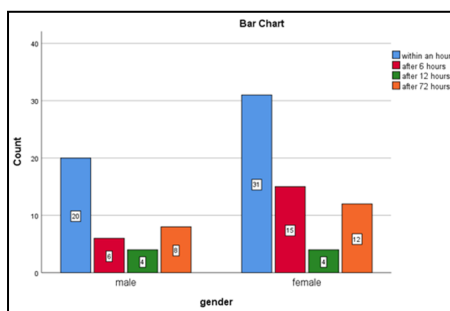


Figure 8. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked maximum delay for taking PEP. majority of the participants said “72 hours” followed by “24 hours” chi square test to determine the association of response with gender gave a p value of 0.556 which was >0.05 hence the results were not statistically significant implying no association between gender and responses.

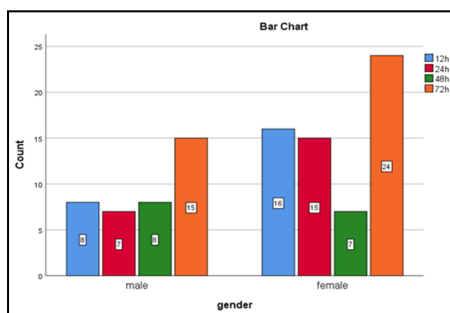


Figure 9. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked “duration fo which PEP to be taken”, majority of the participants said ‘6 months’ followed by “28 days” chi square test to determine the association of response with gender gave a p value of 0.416 which was >0.05 hence the results were not statistically significant implying no association between gender and responses.

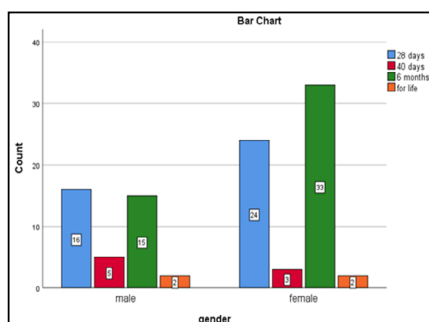
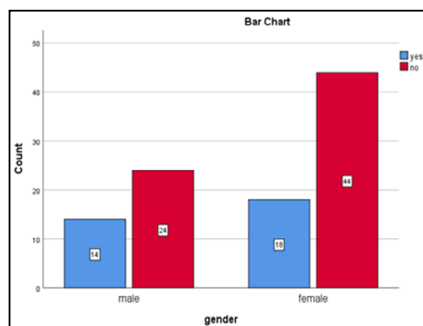


Figure 10. Bar graph represents the distribution of responses between male and female. X axis represents gender and Y axis represents no of responses. When asked did you attend a course on post exposure prophylaxis” 68% of the participants said ‘no’ and 32% of the participants said yes chi square test to determine the association of response with gender gave a p value of 0.351 which was >0.05 hence the results were not statistically significant implying no association between gender and responses.



reported by Mathewos et al., among HCWs, [25] Kasat et al., [26] among postgraduate dental surgeons. The difference might be due to the difference on the level of awareness among the different study populations. The maximum benefit of PEP is obtained by commencing prophylaxis within the first hour of exposure, although it may be delayed to a maximum of 72 hours, after which

it is less effective in preventing infection. The present study shows that 70% knew the length of time to take PEP. This value is low compared to previous reports from Nigeria [27] but higher than the report from a study among HCWs in Indian. [28] This study shows that only 28% of the participants have attended any training about PEP. This may be due to the fact that training or semi-

nars on PEP and standard precautions aren't frequently administered for the HCWs within the institution. This is less than the Mathewos et al. [25], but higher than the report by Shivaprakash et al., [28] among dental surgeons in India. The majority of the dental surgeons in the present study had adequate knowledge about PEP for blood-borne viral infections, which is higher than the finding of Tebeje and Hailu [29] in south-west Ethiopia, but slightly higher than what is reported in a Zimbabwean study [30]. The dental surgeons exhibited a good attitude towards PEP for HIV/HBV. Over 95% of the participants agreed on the importance of PEP for HIV/HBV and the availability of PEP guidelines in work place. This finding was similar to that reported by Mathewos et al., [25].

The available medical literature does not adequately address the issue of the HCW's knowledge-base on modes of transmission and PEP for HBV and HCV. [31] Some of the reasons cited by the respondents in study by sivaprakash et al for not taking of the PEP service included: fear of stigmatisation and discrimination; lack of awareness of the existence of the PEP service and protocol; and, lack of understanding of the value of reporting exposures. Comparatively, an alarmingly high proportion of Nigerian surgeons in another centre took no action once they were exposed. [32] A study of European medical students found that few students did not report needlestick injuries, [33] and only 18% of London, England, doctors sought advice regarding PEP despite over three-quarters of doctor reporting occupational injury. [7] the rationale for the discontinuation of PEP was found to be fear of adverse effects among the respondents. This finding was in agreement with another study conducted in Dar es Salaam, in which they showed that many respondents failed to use PEP for the full length of the time prescribed [34]. Our institution is passionate about high quality evidence based research and has excelled in various fields [35-45]. One of the limitations of our study was that in evaluating the dentists' practice, we trusted their personal statements, which might be different from their real practice. Moreover, this research was a cross sectional study and thus suffered from all limitations of this type of the study.

Conclusion

In conclusion, the study revealed that the knowledge and practice of dental surgeons prophylaxis after exposure to blood and body fluids is Availability of a formal PEP training centre with proper guidelines is recommended to enhance the knowledge attitude and practice amongst dental surgeons regarding prophylaxis after exposure to blood and body fluids.

Acknowledgement

With sincere gratitude, we acknowledge the staff members of the department of oral and maxillofacial surgery, department of conservative dentistry and endodontics and saveetha dental college and study participants for their extended support towards the completion of research.

Authors Contribution

Abhishek - carried out the survey and writing of the manuscript
Dr. Balakrishnan- corresponding author and guided the study
Dr. Deepak - review of the article.

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