

## General dental practitioners awareness of the guidelines about post-exposure procedures relating to Hepatitis and HIV

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### ABSTRACT

**Objective:** To evaluate awareness of general dental practitioners (GDP) in Iran about the post-exposure management of hepatitis and HIV.

**Methodology:** A randomly selected sample of 136 registered GDPs who were practicing dentistry in Khorasan (Iran) completed the questionnaire. Statistical analysis was performed by use of SPSS 11.5 Software and One way test and Student t-test for parametric data and Chi-square tests for non-parametric data.

**Results:** The average score was 11.8% showing the low level of awareness among GDP in Iran. The awareness level was higher in relatively more experienced GDPs. The age group between 25 and 34 years had the highest knowledge. Awareness of the participating GDPs about HBV was of higher level than that related to AIDS and HCV.

**Conclusion:** The results of this study showed a significant lack of awareness among GDPs in Khorasan about post exposure management of hepatitis and HIV. An educational program focusing attention on post exposure management of hepatitis and HIV for GDPs is needed.

**KEY WORDS:** Awareness, Hepatitis, Post exposure, General Dental Practitioners.

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### INTRODUCTION

Healthcare personnel (HPC) are frequently subjected to acquiring occupational hazards including cross-infection from blood borne pathogens following exposure to blood and body fluids. Exposure to these has been reduced as the result of personal protection programs, but they are still reported worldwide. HCP with frequent exposure to blood or needle-stick injury have a significantly higher risk of HBV infection when compared to HCP with less-frequent chances to blood or needle-stick injury.<sup>1</sup>

CDC reported that 100 to 200 HPC died from hepatitis B annually and they have 2 to 4 times greater risk for contamination.<sup>2</sup> Studies in the United States showed that HCP were 10 times more infected to HBV than the general population.

Therefore, routine vaccination of HCP against hepatitis B and the use of standard precautions to prevent exposure to blood and other potentially infectious body fluids have been recommended since the early 1980s.<sup>3-8</sup>

The annual incidence of occupational exposure is reported to be 3.5/100 HPCs. Overall, 37% of HBV, 3% of HCV and 4% of HIV infections in HPCs are due to occupational exposures.<sup>9</sup> Studies showed that the risk of HIV transmission after percutaneous exposure from an infected patient is 0.3%, compared with 6-30% for HBV and 1.8% for HCV. Post exposure prophylaxis reduces this risk by about 81% in HIV exposure.<sup>1</sup> In the studies of HCP who were injured with HBV contaminated needles, the risk of developing clinical hepatitis was between 6 - 33%. But the risk of developing serologic evidence of HBV infection was between 23% - 61%.<sup>10</sup> Vaccination against hepatitis B also reduces the risk of transmission. The effectiveness of hepatitis B immune globulin (HBIG) or hepatitis B vaccine in various post-exposure settings has been evaluated by prospective studies. In the occupational setting, multiple doses of HBIG initiated within one week following per-cutaneous exposure to HBsAg-positive blood provides an estimated 75% protection from HBV infection.<sup>11-13</sup> Although the post-exposure efficacy of the combination of HBIG and the hepatitis B vaccine series has not been evaluated in the occupational setting, the increased efficacy of this regimen is observed in perinatals compared with HBIG alone.<sup>14</sup>

Considering the importance of post exposure prophylaxis in prevention of infection in health care workers, their awareness about these procedures has a critical importance. The aim of this study was to evaluate the awareness of GDPs in Khorasan (Iran) about post exposure prophylaxis (PEP) of blood born disease.

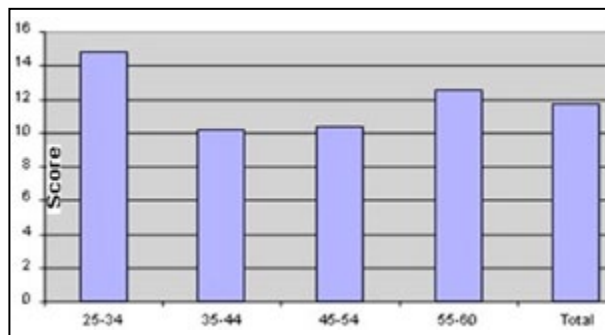


Fig.1: Awareness score based on the age of subjects.

## METHODOLOGY

This was an analytical cross-sectional study which was approved by the Ethics Committee of Mashhad University of Medical Sciences. Subjects were asked to complete a self-administered questionnaire. The first part of this questionnaire was about demographic characteristics of subjects and the second part contained 18 questions about knowledge level of subjects regarding PEP. Every correct response was scored as +1, incorrect response was -1 and N/A (not answered) was scored as zero. The knowledge level was categorized into the following levels: high knowledge (more than 70% of the total score), intermediate (50 - 70% of the total score) and low / fair (less than 50% of the total score).

Ten expert Oral Medicine specialists in Mashhad Dental School approved validity of the questionnaire. Reliability of the questionnaire was evaluated by Test-Retest Method. The 4 weeks-apart repeat results of the pilot study involving 15 GDPs showed reliability and validity of the use of the questionnaire. We also used simple random sampling and the questionnaire was gathered from responders participating in workshops. Data was coded and subsequently processed by SPSS 11.5 software, One way test and Student t-test for parametric data and Chi-square test for non-parametric data.

## RESULTS

One hundred thirty six GDPs participated in this study. The average score earned by the participant GDPs was 11.08%. None of them got more than 70% score (high level awareness). Five had intermediate level scores and the rest of them obtaining low level awareness (less than 50%). Seventy GDPs were females with their average score of 14.92% (or 2.69) but in males it was 8% (1.44) and the difference was significant ( $p = 0.032$ ). The relation between age and awareness level is shown in Fig.1. There was no statistically significant difference between various age groups ( $p=0.143$ ). Relation between duration

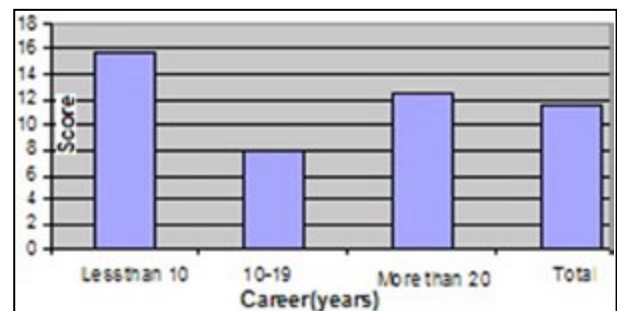


Fig.2: Awareness score based on years of career.

of professional career and awareness is shown in Fig.2 with the difference not statistically significant. ( $p=0.113$ ). Forty nine subjects had participated in infection control workshops and their average 9.07 (1.63) but 89 cases who had not participated in these workshops got the score of 12.96% (2.33). This difference is not also statistically significant ( $p=0.771$ ). The awareness about hepatitis (5.77%) was more than HIV (-0.23%).

## DISCUSSION

Average score of awareness in our study was 11.08 which was similar to the result of the study done by Sofala et al in 2007 (score: 10%) and Garcia et al. in 2008 (score: 10.8).<sup>15,16</sup> This shows that awareness of GDPs in Mashhad about post exposure procedures of hepatitis and HIV is inadequate and is lower than other HPCs.<sup>17</sup> The awareness level in women was significantly higher than men. This shows that women put more importance on their health. In this study dentists aged between 25-34 years had the highest level of knowledge. It seems that the younger generation GDPs are more actively involved in scientific programs and give more value to prevention guideline. On the other hand GDPs with a professional career experience of less than 10 years had more awareness level which emphasizes that the younger dentists are better educated in infection control management.

GDPs working in private centers had a higher level of knowledge than those who were working in public clinics. The reason seems to be that doctors who work in private clinics visit fewer patients and have more time to study and keep them update. None of the previous studies has considered various factors regarding the level of knowledge, while in this study age, sex, occupational and educational factors were also included. As mentioned earlier the awareness about hepatitis was higher than AIDS. It seems because of easier transmission of hepatitis in dental clinics and higher prevalence in the community. Considering the high probability of exposure in dental clinics which is about 6% (based on CDC announcement) and consequences of hepatitis and AIDS for community and also lack of knowledge about post exposure programs, a need for more structured teaching programs is revealed.

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