INTRODUCTION

Occupational hazard can be defined as a risk to a person usually arising out of employment. It can also refer to a work, material substance or situation that predisposes or itself causes accidents or disease at workplace. The practice of dentistry exposes dental professional to a variety of work related hazards like long-working hours, working in a sedentary state, with anxious patients, and exposure to aerosols generated by high speed rotary hand pieces. The most common injuries reportedly experienced by the dental hygienist are eye infection, psychological stress, cervical/back pain, elbow joint pain, hearing problem and material allergy. Strained posture at work leads to disease of the musculoskeletal and peripheral nervous system. Close contact with patient's saliva and blood exposes the dentist to occupational bio-hazards, mainly of the contagious nature. The noise of suction, saliva ejectors, turbines, engines, amalgamators and compressors cause impaired hearing. A limited surgical area with artificial lighting results in eye-strain, conjunctivitis, blurred vision or short-sightedness. Many clinical situations may be a source of stress for dental practitioners. Dental materials and disinfectants cause allergies. The adverse effects of mercury and nitrous oxide are known but those of visible blue light are not so well known.

Although modern dentistry has been cited as the least hazardous of all the occupations, many risks still challenge the status of this occupation. Studies have shown that dentists report more frequent and worse health problems than other high-risk medical professionals. Occupational hazards, such as interactions with patients, physical strain and financial pressure, negatively relate to psychological wellbeing of a dental professionals. Apart from this, dental environment is also associated with a significant risk of exposure to various micro-organisms.

The aim of this study was to assess the frequency of occupational hazards among selected dental surgeons of Karachi.

METHODOLOGY

A total of 130 dentists, involved in clinical practices at hospitals of Karachi, were included in this study. The study was conducted from February to March 2014. All benefits of the study were explained and informed consent was taken. The dentists’ names were kept confidential. A self-administered questionnaire was designed and distributed to 130 clinical dentists. It comprised of a form asking information about the socio-demographic profile of dentists and questionnaires regarding occupational hazards experienced in practice.
after one week and the completed forms were analyzed for different variables (cervical/back pain, knee/elbow joint pain, eye infection, impaired hearing, psychological stress, material allergy etc).

All the collected data were entered into the SPSS (version 20). Mean ± SD were calculated for age. Frequency and percentage were calculated for gender, occupational hazard and its type. Occupational hazards were stratified with respect to experience of the consultant.

RESULTS

A total of 130 dentists, involved in clinical practice, were selected and included in this study. The age ranging 36 to 46 years had the highest frequency (60%). The average age of the dentists was 39 ±5.76 years (95%CI: 38.00 to 39.99). Out of 130 dentists, 45 (35%) were males and 85 (65%) were females. Among those, 93.8% (122/130) had experienced occupational hazard during practice, while 6.2% (8/130) had not experienced any occupational hazard. Regarding their experience, 10 (8.196%) had 1 to 5 years experience, 28 (22.95%) had 6 - 10 years of experience, 34 (27.86%) had 11 - 15 years, and 50 (40.98%) had more than 15 years of experience (Table I).

Most common occupational hazard was cervical/back pain that was observed in 81.96% dentists followed by knee/elbow joint pain in 53.27%, eye infection in 44.615%, psychological stress in 41.80%, impaired hearing in 40.98%, and material allergy in 12.29% (Table I).

<table>
<thead>
<tr>
<th>Experience in years</th>
<th>Occupational hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>10 (8.196%)</td>
</tr>
<tr>
<td>6-10</td>
<td>28 (22.95%)</td>
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<tr>
<td>11-15</td>
<td>34 (27.86%)</td>
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<tr>
<td>&gt;15</td>
<td>50 (40.98%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Types of occupational hazards</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical / back pain</td>
<td>100 (81.96%)</td>
</tr>
<tr>
<td>Knee / elbow joint pain</td>
<td>65 (53.27%)</td>
</tr>
<tr>
<td>Eye infection</td>
<td>58 (44.615%)</td>
</tr>
<tr>
<td>Psychological stress</td>
<td>51 (41.80%)</td>
</tr>
<tr>
<td>Impaired hearing problems</td>
<td>50 (40.98%)</td>
</tr>
<tr>
<td>Material allergy</td>
<td>15 (12.29%)</td>
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</tbody>
</table>

DISCUSSION

The occupational hazards found among dentists include wide range of risks. Knowledge and awareness about these problems is important. According to the results of this study, 41.80% of dentists were currently suffering from psychological stress. Dentistry is often perceived to be more stressful than other occupations. This is evidenced from studies worldwide.9 Work load, difficult environment, achieving perfection in load, default environment, achieving perfection in skill, are some of the factors responsible for psychological stress. In the present study, majority of dentists stated negative influence of the environment and patient burden to be reasons behind stress. This may be due to the fact that study population belonged to public hospital where time management is often a major issue. This is in accordance with a study done in England, where majority of General Dental Practitioners (GDPs) ranked issues of time management as a major stressor.10 This episode of stress is detrimental and often leads to professional burnout or increased use of substance abuse particularly tobacco smoking by the dentists.11 Burnout is reported to be more among general surgeons and oral surgeons as compared to other specialities.12

In a local study, 75.8% dentists agreed with the statement that their work is physically difficult. The high prevalence of fatigue may be associated with specific features of their work. According to our findings, physical disorders and illnesses appear early in dental careers. The high prevalence of physical disorders may result from the lack of understanding of ergonomic principles and uncomfortable working environment which was a common practice due to outdated equipment.13

With regards to musculoskeletal disorder, 66.4% suffered from various types of aches like knee, wrist, back ache etc. This is in accordance with a study done in Greece where 66% of dentists were affected by these problems.14 Other studies carried out in Denmark,15 Israel,16 and Australia17 also report similar findings. Thus worldwide musculoskeletal problems are the most frequent among dentists, with a reported prevalence of 32 - 82%.18 These symptoms have often been linked to the fact that during dental treatment there is constant monotonous movement of the arm which stresses wrist and elbow.19 In the present study, it was observed that posture of the dentist at work with arm abducted and neck bent. Majority of dentists practised sitting dentistry and used direct approach for visualization of maxillary teeth. This extension of neck for better visualization was major reason for neck pain among dentists. In a study in Denmark, majority of dentists followed sitting approach and 60.4% suffered from back ache.20,21

Latex gloves allergy is the most common type of allergy reported by the dentists.22 The number of cases of latex allergy has increased dramatically.22 Similarly, meth acrylate based products like acrylic resins are another major cause of contact dermatitis in clinical setting. In the present study, material allergy was found to be 12.29%.

CONCLUSION

Occupational hazard in the dental field represents a serious risk that should be considered while working in that field. Dentists should take care of their proper
position along with complete protection of themselves while working.

REFERENCES


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