ORIGINAL ARTICLE

PROFESSIONAL HAZARDS AMONG DENTISTS OF THE TWO PUBLIC SECTOR TEACHING HOSPITALS OF KHYBER PAKHTUNKHWA PROVINCE OF PAKISTAN

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ABSTRACT

Professional Hazards are becoming an impending health problem in various specialties and dentists are no exception because of the nature of the stressful work they perform. A study was carried out among dental professionals working in two teaching hospitals, Khyber College of Dentistry, Peshawar and Ayub Medical College, Abbottabad, to find out prevalence of professional hazards including psychological, muscuoskeletal, biological and allergic problems.

Questionnaires were distributed among150 dentists having BDS degree and registered with Pakistan Medical and Dental Council (PMDC). Questions pertaining to psychological, musculoskeletal, biological and allergic hazards were included in the questionnaire. Data collected were analyzed using SPSS version 17. Out of 150, 113 questionnaires were returned. Among the dental professionals, 50% were dental graduates, 35% post graduate trainees and the rest were either Members or Fellows of the College of Physicians and Surgeons i.e., MCPS, FCPS respectively or MSc. Work experience was < 5 years among 61% of the dentists while only 9.7 % had work experience of > 20 years. When asked about any current psychologically traumatic condition, 42% dentists answered with yes. For psychological stress, 18.6% stated it had negative influence on the working environment. Regarding various musculoskeletal disorders, 33.6% of the dentists had no complaints, while 9.7% suffered from back ache, head ache, knee ache, and neck pain. About the approach for treating maxillary teeth, 48.7% used direct approach (direct vision for dental procedures), while 45.1% treated patients using sitting posture. When inquired about frequency of needle stick injuries, 54% were pricked <5 time. Also 46.9% had eye splash from infected saliva and 43.4% had experienced glove puncture during surgical procedure < 5 times during their work. 82.3% dentists were immunized against Hepatitis B. Concerning allergic reactions, 17% suffered from latex allergy and 8% had allergy from acrylic resin.

An increased prevalence of psychological and musculoskeletal problems were found among dentists. Majority of dentists came across eye splash, needle stick injury and glove puncture during their practice. Rate of immunization was effective but use of universal precautions was found to be inadequate among them.

Key Words: *Professional hazards among Dentists.*

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INTRODUCTION

Dental professionals work in an environment that predisposes them to a large number of deleterious work hazards daily. Bernadino Ramazzini, also known as "the father of occupational medicine" explained the importance of awareness from occupational health hazard in early 18th century.[1] Occupational hazard is any risk or danger that a person might encounter as a result of nature or working environment of a particular profession.[2]

The occupational hazards that a dentist may come across are many. Studies across the world have shown that as compared to other medical professions, dentists report more frequent and serious health problems[3], these problems include increased psychological stress, musculo- skeletal disorders and allergic reactions[4]. Beside that Dental professionals on daily basis are in contact with tissues, saliva and blood directly or indirectly.[5] This predisposes them to a large number of transmitted infectious diseases.[6] Awareness from professional hazards is essential as physical wellbeing has been proved to be connected to psychological comfort.[7] Assessment of professional hazards among dentists is therefore an important aspect of dental profession.

The present study was aimed to assess prevalence and awareness from professional hazards among dentists working in two teaching hospitals of the public sector of Khyber Pakhtunkhwa province of Pakistan i.e., Khyber College of Dentistry, Peshawar and Ayub Medical College, Abbottabad.

METHODOLOGY

The present study was carried out at two major dental hospitals, Khyber College of Dentistry, Peshawar and Ayub Medical College, Abbottabad. One hundred and fifty (150) specially designed questionnaires were distributed among dental professionals to assess the prevalence of various hazards like psychological stress, musculoskeletal disorders, cross infection hazards and allergic reactions. The Dental Practitioners having Bachelor of Dental surgery (BDS) degree and a valid registration with Pakistan Medical and Dental Council (PMDC) were included in this study. Study objectives were explained to the dentists and a fully informed consent was taken from them.Results obtained were analyzed using SPSS version 17.

RESULTS

Results of the study are shown in tables and figures which are self-explanatory.

TABLE 1: QUALIFICATIONS OF THE RESPONDENTS

S. No.	Qualification	Number of Dentists (n)	Percentage (%)
1	BDS	57	50.4
2	P G Trainees	35	31
3	MCPS	8	7.1
4	FCPS	7	6.2
5	Msc	5	4.4
6	Others	1	0.9
	Total	113	100%

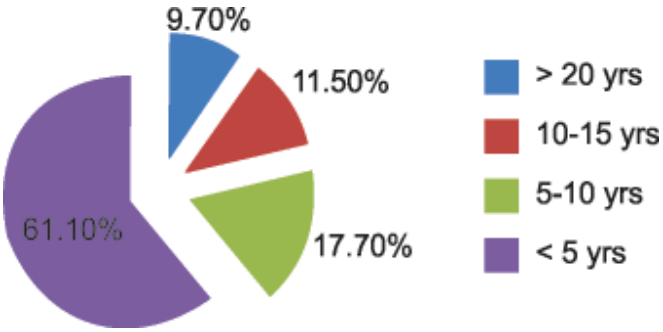

Fig 1: Length of Practicing Dentistry

TABLE 2: PERCEIVED CAUSES OF PSYCHOLOGICAL EPISODES

S. No.	Perceived cause	Number of Dentists (n)	Percentage (%)
1	Financial dissatisfaction	1	.9
2	Long working hours	8	7.1
3	Negative influence of environment	21	18.6
4	Work burden	15	13.3
5	Not applicable	55	48.7
6	Other reasons	4	3.5
7	All reasons	1	.9
8	Combination of 2 or more reasons	8	7.1
	Total	113	100

TABLE 3: MUSCULOSKELETAL COMPLAINTS

S. No.	Musculo skeletal complaints	Number of dentists (n)	Percentage (%)
1	All complaints	3	2.7
2	Combination of 2 complaints	39	34.5
3	Knee ache	8	7.1
4	Head ache	9	8
5	Neck pain	5	4.4
6	Back ache	11	9.7
7	No complaints	38	33.6
	Total	113	100%

TABLE 4: PRECAUTIONS USED DURING TREATMENT

S. No.	Precautions used	Number of Dentists (n)	Percentage (%)
1	All precautions	10	8.8
2	Combination of 2 precautions	97	85.8
3	Masks	1	0.9
4	Gloves	5	4.4
	Total	113	100

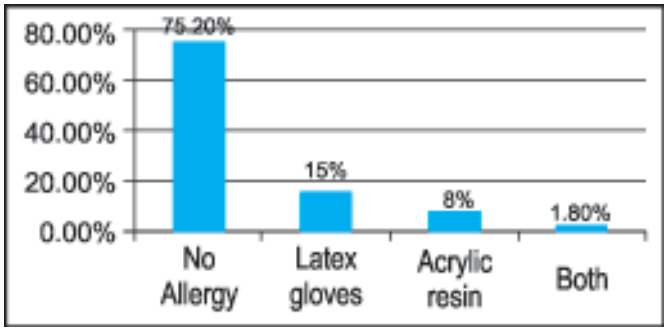

Fig 2: Percentages of Allergies

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, 42% 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.[8]Work overload, difficult environment, achieving perfection in skill, and handling uncooperative patients 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 reason behind stress. This may be due to the fact that study population belonged to public hospitals where time management is often a major issue. This is in accordance with a study done in England, where majority of General Dental Practioners (GDPs) ranked issues of time management as major stressor.[9]This episode of stress is detrimental and often leads to "professional burnout" or increased use of substance abuse particularly tobacco smoking by the dentists.[10] Burn out is reported to be more among general surgeons and oral surgeons as compared to other specialties.[11]

With regards to muscular disorders, 66.4% suffered from various types of aches like knee, wrist, back ache etc. This correlates with the study done in Greece where 66% of dentists were affected by these problems.[12] Other studies carried out in Denmark[13], Israel[14], and Australia[15]also report similar findings. Thus worldwide musculoskeletal problems are the most frequent among dentists, with a reported prevalence of 32-82%.[16]These symptoms have often been linked to the fact that during dental treatment there is constant monotonous movement of the arm which stresses wrist

TABLE 5: NEEDLE STICK INJURY, EYE SPLASH AND GLOVE PUNCTURE DURING DENTAL TREATMENT

No. of times	% of needle stick injured	% of eye splash from infected saliva	% of glove puncture
More than 10 times	6.2	15.9	17.7
5-10 times	9.7	18.6	23.9
Less than 5 times	54	46.9	43.4
Never	30.1	17.7	15

and elbow[17]. Also posture of the dentist at work with arm abducted and neck bent is a major cause of neck pain.[18] In this study, majority of dentists practiced sitting dentistry and used direct approach for visualization of maxillary teeth. This is evidenced from other studies where excessive craning of neck for better visualization was a major reason for neck pain among dentists.[19, 20]In a study in Denmark majority of dentists followed sitting approach and 60.4% suffered from back ache.[21]

The most important of all the professional hazards in dental setting is the risk of bio hazard infection. Dentists handle infected saliva and blood which is diverse in aerobic, anaerobic bacterial flora as well as viral pathogens.[22] For these reasons protective barriers and immunization against Hepatitis B has a crucial role in prevention from these hazards. In the present study 54% of dentists had needle stick injury, 46.9% had eye splash from infected saliva and 43.4% had experienced glove puncture during surgical procedure. Percutaneous exposure (PE) through sharp injury and splashes remain a common problem among dental personnel. In studies done in United Kingdom (UK) and Thailand about half of dentists reported percutaneous exposure.[23] In another study prevalence of percutaneous exposure was found to be 19.2%[24]. Similarly glove puncture is also reported to be high. According to a study done in UK, 1.9% of latex while 5.3% of nitrile gloves sustained puncture during dental procedures.[25] this is due to the fact that dentists most of the time work in closed and restricted fields and also frequently use sharp instruments. This proves to be an important portal of transmission of infectious diseases.

Among the dentists, 82.3% were immunized against Hepatitis B, while 85.8% used masks and gloves in combination as barrier technique. Generally gloves and masks are found to be most likeable items of personal protective equipment (PPE) while aprons and goggles are less frequently used.[26] This study showed less use of eye goggles and aprons as compared to other studies and this is in spite of the larger incident of eye splash and glove tear in these dentists. Reason may be due to overburden of work and less financial resources of public hospitals.

Regarding immunization against Hepatitis B, results are comparable to studies done in Berlin[27], however levels are much low as compared to studies in England[28] where majority of dentists remain immunized against Hepatitis B. This highlights greater awareness and campaigns over the importance of protection from hepatitis B in those areas.

When Dentists were asked about allergic hazards, majority of them reported no allergies while a small number suffered from latex allergy and acrylic resin. Latex gloves allergy is the most common type of allergy reported by the dentists.[29] The number of cases of latex allergy have increased dramatically.[30] Similarly methacrylate based products like acrylic resin are another major cause of contact dermatitis in clinical setting.[31]

CONCLUSION

Professional hazard is an important topic. Despite the advances in dentistry, many risks still prevail like cross infection, stress hazards, musculo skeletal problems and allergic reaction. Awareness and protection from these risks is important, as healthy professional is essential for healthy patients.

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