ORIGINAL ARTICLE

Knowledge, Attitude and Prevalence of Musculoskeletal Pain among the Dentists

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ABSTRACT

Objective: To investigate knowledge, attitude and prevalence of musculoskeletal pain among the dentists of tertiary care dental hospitals of Rawalpindi and Islamabad.

Study Design: Descriptive cross sectional.

Place and Duration of Study: The study was carried out at AFID Rawalpindi from January 2020 to February 2020.

Materials and Methods: This study was conducted on 250 dentists of tertiary care dental hospitals of Rawalpindi and Islamabad working in different specialties through a self-administered questionnaire. Different variables like age, gender, specialty, working hours, work experience, posture and vision were included. The results were analysed on SPSS version 20.

Results: The study showed 100% male and 90.9% female dentists having musculoskeletal disorders of all ages and specialties, regardless of the variables. The longer the working hours and work experience, the higher was the incidence of musculoskeletal pain. There is a high need to educate the dentists about the hazards of such disorders to prevent them, thereby ensuring longer and healthier careers.

Conclusion: Musculoskeletal disorders are among the most common problems in dentists; they should take the necessary steps in order to prevent them.

Key Words: *Dentist, Musculoskeletal, Occupational Hazard, Pain.*

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Introduction

Professional work is the major factor in shaping an individual's life as it determines one's income, lifestyle, livelihood, social interaction and health.[1] All the professions of this world are associated with certain amount of internal stress.[2] Such stresses can be broadly classified as occupational hazards which as described by Bernandino Ramizzini are work, material, substance, process, or situation that predisposes, or itself causes accidents or disease, at a work place.[3]

The field of medicine including dentistry shows hazardous impacts on practitioner's life.[4] Even though modern dentistry has been recognized as one of the least hazardous occupations, still many risks challenge this profession.[5] Dentists are faced with different kinds of occupational hazards which can be physical, mechanical, biological, chemical and psychological. Common physical and mechanical hazards in dentistry are eye injuries occurring due to projectiles like debris or restorations' dust, cuts from sharp instruments like blades, or small puncture wounds and pricks from needles and other sharp equipment. Such injuries can lead to the transmission of infectious diseases to the dental surgeon and his team.[6] Severe damage to the body cells can be caused by harmful radiations including ionizing radiations (X-rays) and non-ionizing radiations (visible and UV light). Vibration and noise originating from the compressor and hand-piece can lead to hearing problems. The use of specific working postures and a continuous repetitive motion can cause musculoskeletal problems like wrist pain, neck pain and lower backache.[6,7] Chemical hazards are

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divided into different categories including organic (solvents, gases and resins), inorganic (like mercury toxicity), caustic (e.g. due to hydrogen peroxide and formaldehyde) and contact dermatitis due to latex allergy (latex gloves). Biological hazards can occur due to infections, toxicity of dental materials, allergens of biological origin, and cross contamination. Lastly, psychological problems can arise as a result of stress/ work load, dissatisfaction due to low wages, lack of job satisfaction, competition, insecurity, fear of lagging behind, professional burnout, and medico-legal problems.[7,8]

Many studies have shown alarming results regarding awareness about occupational hazards among dentists in developed countries but lesser data is available in developing nations.[8] Pakistan Dental Association and Pakistan Medical Commission have not yet published any guidelines for control of professional hazards.[9]

Therefore, this study was designed to assess the level of awareness of the occupational hazards especially musculoskeletal pain and the preventive measures adopted by dentists working in tertiary care hospitals of Rawalpindi and Islamabad.

Materials and Methods

This descriptive cross-sectional study was carried out at AFID Rawalpindi from January 2020 to February 2020 on dentists of tertiary care dental hospitals of Rawalpindi and Islamabad. A total of 250 dentists willingly participated in this study. A self-administered questionnaire was used. An informed consent was taken from the participants, and they were ensured that their responses would be kept anonymous and treated confidentially. The questionnaire consisted of 18 closed ended questions related to dentists' knowledge, attitude and practice about effects of working hours, vision and posture on musculoskeletal pain. Response of the participants was analyzed by SPSS version 20.

Results

Out of the total 250 participants, 92.8% (232) were females and the remaining 7.2% (18) were males. Among them, 90.9% of females reported to have musculoskeletal pain. (Table 1).

Among these 250 respondents, 89.6% with work experience of less than 5 years, while all dentists with work experience between 5 to 20 years reported musculoskeletal pain, showing that there is an increase in frequency of musculoskeletal disorders with increase in years of practice (table 1).

Table 1: Effects of gender, working experience, specialty, level of specialization, number of working hours per day, posture and vision on musculoskeletal pain

		Musculoskeletal pain		Total	SD	*P*- Value
		Yes	No			
Gender	Male	18	0	18	0.26	0.184
	Female	211	21	232		
Working Experience	<5 Years	181	21	202		
	5-20 Years	48	0	48	2.81	0.06
Specialty	Maxillofacial Surgery	54	12	66	1.06	.00
	Operative Dentistry	72	6	78		
	Orthodontics	55	3	58		
	Prosthodontics	48	0	48		
Level of Specialization	House Officer	78	12	90	1.0	.03
	General Dentist	3	0	3		
	Post-graduate Trainee	136	9	145		
	Consultant & above	12	0	12		
Number of working hours per day	<5 hours	3	0	3	1.65	0.16
	5-10 hours	214	21	235		
	>10 hours	12	0	12		
Posture	Sitting	76	9	85	0.89	0.50
	Standing	45	3	48		
	Both	108	9	117		
Vision	Direct vision	43	6	49	0.80	0.10
	Indirect vision	9	3	12		
	Both	177	12	189		

Musculoskeletal pain among different fields of dentistry was noted as 81.8% in Maxillofacial Surgery' Department, 92.3% in Operative Dentistry' Department, 94.8% in Orthodontics' Department and 100% Prosthodontics' Department.

Increase in working hours per day also had a proportional effect on musculoskeletal pain, with 91% dentists working for 5-10 hours having pain and 100% of dentists working for more than 10 hours having musculoskeletal pain (Fig 1).

The number of dentists reporting musculoskeletal pain with sitting working posture were 89.4%, with

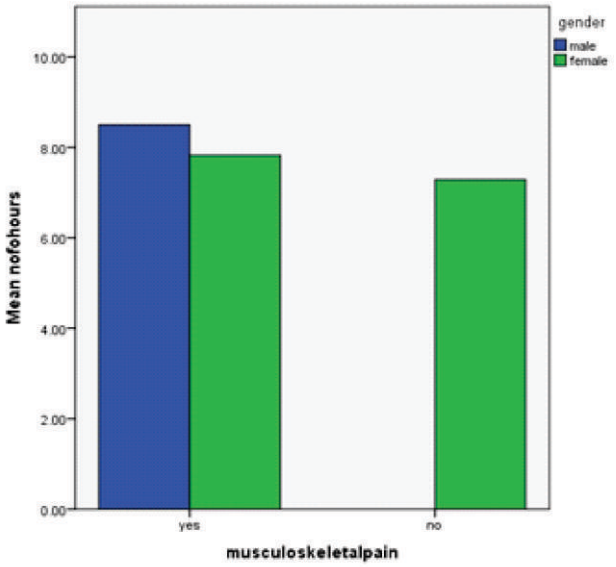

Fig 1: Gender distribution of working hours on musculoskeletal pain

standing working posture were 93.7% and using both working postures were 92.3%,.

Dentists using direct vision (87.7%), indirect vision (75%) and both direct & indirect vision (93%), all reported musculoskeletal pain.

Discussion

Occupational hazard can be defined as a risk or a hazard to a person as a consequence of nature or working conditions of a particular job.[6] Practice of dentistry exposes dental professionals to a variety of work-related occupational hazards which pose a significant risk to dentists.[7]

In the present study all the participants were aware of occupational hazards in dentistry. Different variables were taken to assess their impact on occurrence of occupational hazards especially musculoskeletal disorders among dentists. In all the categories, there was a high frequency of musculoskeletal pain in dentists, regardless of gender, posture or vision used. Similar results were found in a study carried out by Soares et al. which shows that 81.4% of the sample reported pain in the last 12 months.[8]

Meisha et al.[10] reported that work related musculoskeletal disorders were common. Ergonomics' training intervention programs should be carried out for longer and healthier careers of dentists. A similar study carried out by Chamani et al.[11] stated that among Iranian dentists, neck trouble had a high prevalence. Preventing chronic pains in dentistry requires changes in the clinical habits of the dentists.

Our results showed that 89.6% of the dentists with work experience of less than 5 years had musculoskeletal pain, which showed that there is an increase in the frequency of musculoskeletal disorders with increase in years of practice. However, according to a study, no significant differences were observed with the years of practice regarding the occurrence of musculoskeletal disorders; except for the knee joints.[12]

The number of practicing hours directly affects dentist's health especially posture and long-standing workloads. These long hours can lead to various musculoskeletal disorders, especially strained posture while treating a patient, which results in stress on the limbs and spine and is a major contributor to musculoskeletal problems among dentists.[13]

In the present study, 94% of the dentists worked for a considerable number of hours (5-10 hours per day). These long hours along with bent head, uncomfortable posture, and repetitive movements of head and neck cause musculoskeletal problems.[14]

In the present study, it was noted that only 2.4% of the dentists were free from musculoskeletal problems. In contrast, different results were concluded from studies done in Finland; which reported musculoskeletal symptoms in the back and neck of 30% of the dentists.[15] The significant factor that causes degenerative changes in spine is posture, which may exert a great amount of pressure on intervertebral disk and may cause prolonged spinal hypomobility, all of which can ultimately lead to subsequent lower back pain.[16]

Hence, there is a dire need that the regulatory bodies should establish some guidelines for the dentists that would prevent them from having such musculoskeletal disorders and the dentists should also start incorporating stretching exercises in their daily schedules.

Conclusion

Musculoskeletal disorders are among the most common problems associated with dentistry. There is a high prevalence of musculoskeletal pain among dentists of all ages, regardless of gender, posture, work experience, specialty and working hours. Therefore, each and every dentist should be mindful

about these musculoskeletal disorders and should take the necessary steps to prevent themselves from having such pains, thus enabling them to have longer and healthier careers.

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