

Prevalence of neck pain and associated risk factors in the dentists working in Lahore, Pakistan

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Objective: To determine the prevalence of neck pain and the association between neck pain and responsible factors among dentists working in different hospitals of Lahore, Pakistan.

Methodology: This cross-sectional survey with non-probability purposive sampling was conducted among 200 dentists working at different hospitals of Lahore, from February to August 2019. We used demographic questionnaire and modified Nordic questionnaire. Chi-square test was used to determine the association between variables and neck pain.

Results: Out of 200 participants, 116 (58%) were

female and 84 (42%) male. The age of ranged from 22 to 55 years (mean 30.30). The prevalence of neck pain was 66% (n=132). There was a statistically significant ($p < 0.05$) association between neck pain and years of work experience ($\chi^2 = 11.22$, $p = .004$), working hours ($\chi^2 = 7.435$, $p = .007$) and posture ($\chi^2 = 12.56$, $p = .002$).

Conclusion: The prevalence of neck pain among dentists seems to be relatively high. The significant risk factors associated with neck pain were poor posture, increased working hours, and years of experience. (Rawal Med J 202;46:364-367).

Keywords: Dentistry, neck pain, posture.

INTRODUCTION

Dentists are prone to musculoskeletal problems especially neck pain due to awkward postures. Musculoskeletal complications are well documented among dentists like other healthcare professionals.¹ Dentists are at high risk of developing many work-related complications, especially back and neck pain.^{2,3} Various studies have shown that neck pain is a common problem among health-care workers.⁴⁻⁷ Approximately 70% population experience neck pain in their lives.^{8,9} Musculoskeletal disorders cause the annual loss of 41 million US dollars to dentists in their professional practice.¹⁰⁻¹²

In a study from Karachi Pakistan, the prevalence of neck pain in dentists was 96%.¹³ In Denmark, however, an incidence of 65%, in Saudi Arabia 65%, and in Australia 57.5%.¹⁴⁻¹⁷ Most dentists (87.2%) reported at least one symptom of musculoskeletal disorders in their lifetime.¹⁷ A survey of 390 dentists from England and Wales reported that 70.3% of them had neck pain.¹⁸

A dentist's working day is full of awkward and static standing and sitting positions to operate within a

precise mouth area of patients. Variety of factors, such as inadequate equipment, special visual focus, workplace scenarios and strong hand movements have a serious impact on dentist's health by creating musculoskeletal pain.³ Due to narrow visual field of the oral cavity, dentist must work with a limited scope of movement that is a high risk factor for neck pain.¹⁹ A recent study revealed that 75% of dentists believe that their work is physically difficult due to a lack of understanding of ergonomics and the unpleasant working environment due to obsolete equipment.²⁰ The purpose of this study was to determine the prevalence of neck pain among dentists working in different hospitals of Lahore.

METHODOLOGY

This cross sectional study was conducted among 200 dentists working at different Hospitals Lahore, Pakistan from February to August 2019. Dentists between the ages of 25 and 55 years of both gender and willing to participate were included. The exclusion criteria were any history of trauma/fracture of the neck or lower back, osteoporosis, and rheumatoid arthritis, any history

of neoplasm, recent surgery of back and neck, pregnancy, systemic disease, or congenital musculoskeletal disorders. Ethical approval was obtained from the Ethical Committee of the Riphah University Faisalabad and informed consent was obtained from all participants..

Modified Nordic questionnaire was used, which consisted of demographic data age, height, weight, working hours and years of work experience, which may reduce the activity of daily living. It is a self-administered questionnaire and its validity has been reported to be moderate to high.^{21,22} Two hundred and fifty questionnaires were distributed and only two hundred forms were returned.

Statistical Analysis: Statistical analysis were performed using SPSS version 21. Chi-square test was used to determine the association between variables and neck pain. $p < 0.05$ was considered significant.

RESULTS

The questionnaire was filled by 116 (58%) females and 84 (42%) males. Majority of dentists were right handed (Table 1). One hundred and thirty two (66%) dentists reported neck pain. Six (4.5%) felt pain in the right arm, 10 (7.6%) in the left arm, while 8 (6.1%) in both arms and 108 (81.8%) reported no radiation of pain to any arm. Six (4.5%) dentists were feeling tingling, 18 (13.6%) numbness, 8 (6.1%) heaviness and 100 (75.8%) showed normal

sensations (Fig.). One third ($n=42$, 31.8%) dentists had changed jobs or duties because of neck trouble. Forty-two (31.8%) participants visited the doctor and physical therapist during the last 12 months. Fifty-two (78.8%) dentists felt pain during work, while 28 (21.2%) felt pain during rest (Table 2).

Table 1. Demographic information of the Participants (N=200).

Variables	Number	%	Mean \pm SD
Gender			
Male	84	42.0%	
Female	116	58.0%	
Age(years)			
21-25	76	38.0%	30.30 \pm 8.837
25-30	76	38.0%	
>30	48	24.0%	
Experience (years)			
1-5	126	63%	6.67 \pm 7.08
6-10	38	19%	
>10	36	18%	
Work in week(Hours)			
<20	40	20.0%	31.22 \pm 12.69
21-30	54	27.0%	
31-40	86	43.0%	
>40	20	10.0%	
BMI			
Under-weight(<18.5)	28	14.0%	22.23 \pm 3.75
Normal(18.5-24.9)	130	65.0%	
Over-weight(25-29.9)	34	17.0%	
Obesity(>30)	8	4.0%	
Hand use			
Right	174	87.0%	
Left	26	13.0%	

Fig. Frequency of symptoms of neck.

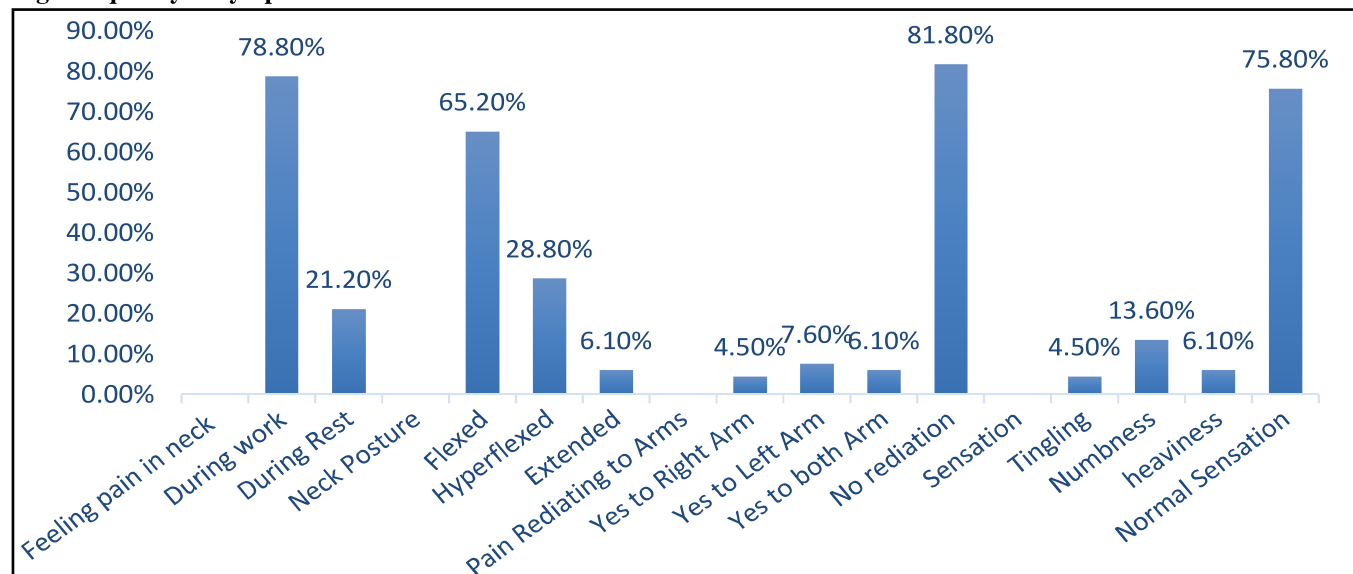


Table 2. Responses of dentists about neck pain, hospitalization and change jobs.

Variables	No		Yes	
	f	%	f	%
Neck trouble(aches, pain or discomfort)	45	34	87	66
Hurt neck in an accident	128	97	4	3
Change jobs or duties because of neck trouble activities	90	68	42	31.8
Work activity	51	38	81	62
Leisure activity	86	64.2	46	34.8
Visit doctor, physical therapist during the last 12 months	90	68	42	32
Neck trouble during the last 7 days (point prevalence)	40	30	92	69.7

Table 3. Association between neck pain and different variable.

Variable		No Pain	Pain	Total	χ^2	p
Age (years)						
	21-25	36	40	76	7.971	0.019
	25-30	26	50	76		
	>30	6	42	48		
Gender						
	Male	26	58	84	0.3	0.584
	Female	42	74	116		
Experience (years)						
	1-5	58	68	126	11.22	0.004
	6-10	6	28	38		
	>10	4	32	36		
Working Hours						
	<20	26	24	40	7.435	.007**
	21-30	20	34	54		
	31-40	20	66	86		
	>40	8	12	20		
Posture						
	Flexed	66	86	152	12.56	0.002
	Hyper flexed	2	38	40		
	Extended	0	8	8		

The results of the chi-square test indicated a statistically significant ($p < 0.05$) association between neck pain with age, years of work experience, working hours and posture and age. The results of the chi-square test ($\chi^2 = .300$, $p = .584$) showed that there was no statistically significant

($p > 0.05$) association between neck pain and gender (Table 3).

DISCUSSION

Musculoskeletal disorders are more common among dentists due to workstation settings and exposure. The second most common musculoskeletal disorder experienced by dentists is neck pain. The frequent occurrence of musculoskeletal disorders in this population has effects on their work, functional activities and everyday life.²³

Our study revealed that neck pain was significantly associated with working hours. This is similar to study by Rehman et al who found that there was a statistically significant association between the neck and low back pain and working hours.³

Certain relationship among individual characteristics, load on body, the psychology of individual and overall fitness with complaints of backache and neck ache among dentists.¹² The result of this study showed that prolonged work related diseases in dentist can be managed by improving ergonomic condition, specially back pain and neck pain in the dentists.

Finding can be biased due to various factors such as the type of clinical settings, workload, work environment, and work stress, which can affect results. Further studies should be performed with larger samples from different populations to generalize these results.

CONCLUSION

The prevalence of neck pain among dentists seems to be relatively high. The significant risk factors associated with neck pain were poor posture, increased working hours, and years of experience.

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