

Prevalence of nonspecific neck pain in dental practitioners of Lahore: A cross sectional study

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Objective: To determine the prevalence of neck pain and neck disability among dental practitioners.

Methodology: This cross sectional study included 345 dental practitioners of both gender, ages above 20 years from six different hospitals of Lahore, Pakistan from April to September 2017.

Standardized questionnaires visual analog scale (VAS) and neck disability index (NDI) were used for data collection. Non-probability convenience sampling was done. Correlation coefficient (r) was used for association between neck pain and ages of the practitioners and working hours.

Results: Out of 345 subjects, 253(73.3%) were female and 92(26.7%) male. Out of 253 female dentists, 141 (55.73%) had pain and 112 (44.27%) had no pain, whereas out of 92 male dentists,

57(61.95%) had pain and 35(38.05%) did not. Out of 345 subjects, 42.6% with no pain, 17.1% with mild pain, 30.7% with moderate pain and 9.6% with severe pain was found. Whereas, out of 345 subjects, 64.9% with no disability, 26.4% with mild disability, 6.4% with moderate disability, 2.0% with severe disability was found. The nonspecific neck pain prevalence among dental practitioners was 57.4%.

Conclusion: The prevalence of nonspecific neck pain was commonly present in dental practitioners. Among dental practitioners, whose working hours per day was 6-10 hours had neck pain. (Rawal Med J 202;45:373-376).

Keywords: Dental practice, dentist, neck pain, nonspecific neck pain

INTRODUCTION

Musculoskeletal disorders relate to the work habits among workers.¹ The working positions like standing and sitting, which the dentist has to keep the position during treatment of the patient, can affect the neck.² Prevalence of different musculoskeletal pains has been reported as more than 50%.³ Dentistry is a bodily, and intellectually, a demanding profession. The physical and mentally characteristics include ability to maintain good posture during long working hours.⁴ The pain in dentists over a year was reported in the neck (50.9%), wrist (43.6%), and back regions (7.3%).⁵ Women face more neck pain as compared to men.^{6,7} Common complains include the stiffness or unbending neck.

Among 290 dental students of Dow University of Health and Sciences, Karachi, 76.2% had musculoskeletal (MSK) pain, out of which 32.4% had neck pain.⁸ Another study reported that out of 82 individuals, 28% had neck pain.⁹ An Iranian study

found that 73% dental participants had musculoskeletal (MSK) pain, the common painful site of the body was neck (43.4%).¹⁰ In another study, MSK disorders were 82.8% when assessed for physical activity which included neck pain (55.9%).¹¹ The purpose of this study was to determine the prevalence of non-specific neck pain and neck disability among dental practitioners in our area.

METHODOLOGY

This analytical cross-sectional study was carried out in six different tertiary care hospitals of Lahore, Pakistan from April 2017 to September 2017. The protocol was approved by the ethical committee of the University of Lahore and Informed consent was taken from all participants. A sample of 345 dental practitioners (sample size was calculated by using the formula $n = Z^2_{1-\alpha/2} \times S_N \times (1-S_N) / L^2 \times \text{prevalence}$, whereas estimated true proportion was 0.34%, desired precision of estimation of margin of error

was 0.05%, and confidence level was 95%)⁸ both male and female dentists, ages 20-45 years with nonspecific neck pain were included in the study. Individuals with tumor, surgery of cervical spine, diabetics, heart diseases hypertension and systemic diseases which leads to neck pain were excluded from the study.

Detailed interviews were taken by physiotherapist from dentists about personal characteristics regarding job history, some work features (working hours) and intensity of the neck pain. Visual analog scale (VAS) and neck pain disability index (NDI) were used to assessing the neck pain. These are the valid instruments which used to evaluate/assess nonspecific or specific neck pain and neck disability. Nonprobability convenience sampling

was used.

Statistical Analysis: Descriptive statistics that is mean and standard deviation were used to represent the total score. Relation between nonspecific neck pain with working hours, the quantitative variables were analyzed using correlation coefficient (r) value at 0.05% level of significance.

RESULTS

Among 345 dental practitioners, 253(73.33%) were female and 92(26.67%) male. Mean age was 27.3 ± 5.1 years (range 20-45). Out of 253 female dentists, 141(55.73%) had pain whereas out of 92 male dentists, 57(61.95%) had pain. There was a strong correlation seen between neck pain and working hours of dentists ($p=0.002$) (Table 1).

Table 1. Correlation between nonspecific neck pain with ages and working hours (N=345).

		Neck pain		Total	Cor. coefficient (R) value	P-value
		No	Yes			
Age group	20-30 years	134 (38.84%)	141 (40.87%)	275	0.261	≤ 0.001
	31-40 years	12 (3.48%)	35 (10.14%)	47		
	41-45 years	1 (0.29%)	22 (6.38%)	23		
Total		147	198	345		
Working hours	Less than 6 hours	50 (14.49%)	48 (13.91%)	98	0.163	0.002
	6-10 hours	90 (26.09%)	121 (35.07%)	211		
	More than 10 hours	7 (2.03%)	29 (8.41%)	36		
Total		147	198	345		

Table 2. Frequencies and percentages of work related neck pain variables (N=345).

		Lifting	Reading	Working	Driving
Female	Mild pain	27 (10.67%)	84 (33.2%)	49 (19.37%)	17 (6.72%)
	Moderate pain	12 (4.74%)	44 (17.39%)	20 (7.91%)	5 (1.98%)
	Sever pain	1 (0.4%)	3 (1.19%)	2 (0.8%)	0
	No pain	213 (84.19%)	122 (48.22%)	182 (71.94%)	231 (91.30%)
Total		253	253	253	253
Male	Mild pain	23 (25%)	41 (44.57%)	21 (22.83%)	3 (3.26%)
	Moderate pain	2 (2.17%)	23 (25%)	11 (11.96%)	3 (3.26%)
	Sever pain	2 (2.17%)	2 (2.17%)	1 (1.09%)	0
	No pain	65 (70.65%)	26 (28.26%)	59 (64.13%)	86 (93.48%)
Total		92	92	92	92

Table 3. Frequencies, percentages, mean and standard deviation of VAS and NDI.

		Frequency	Percentage	Mean ± SD
VAS	No Pain	147	42.6	1.07±0.06
	Mild Pain	59	17.1	
	Moderate Pain	106	30.7	
	Severe Pain	33	9.6	
Total		345	100.0	
NDI	No Disability	224	64.9	4.31±0.15
	Mild Disability	91	26.4	
	Moderate Disability	22	6.4	
	Severe Disability	7	2.0	
Total		345	100.0	

Some work related variables like lifting objects, reading books, working in department and driving were studied. Among 253 female and 92 male practitioners pain intensity mild, moderate, severe and no pain at all was studied and frequencies & percentages are shown (Table 2). The frequencies, percentages, mean and standard deviation of VAS and NDI are shown in Table 3.

DISCUSSION

Musculoskeletal disorders result from prolonged awkward or forced body postures causing a neck pain.¹² These often develop in dentists due to posture and long working hours.¹³ We found that 55.73% females and 61.95% males had pain. The overall prevalence of nonspecific neck pain among dental practitioners was 57.4%.

A cross-sectional survey from Lahore reported that neck pain was the most common complaint, with 38.8% had slight pain during reading, 21.8% had moderate pain during reading, 11.2% could not read books due to moderate pain in neck and 1.6% had severe pain in neck while reading so could not do so.¹⁴ In our study, 36.2% had mild pain, 19.4% had moderate pain and 1.5% participants had severe pain during reading.

A study on 272 dentists from China showed that working hours per day were associated with neck pain.¹⁵ In our study, working hours per day were associated with neck pain ($p=0.002$). A study was on 120 dental graduates from Armed Forces Institute of Dentistry, Rawalpindi reported that 70% had one or more episodes of musculoskeletal disorders with

lower back ache in 65% followed by neck pain in 53.3%.¹⁶

In our study, neck pain was observed in 57.4% participants. A study from India measured pain by VAS and NDI and prevalence of neck pain was 27% and mean VAS for neck pain is 2.48.¹⁷ In our study, mean VAS was 1.07 and NDI was 34.8%.

CONCLUSION:

Nonspecific neck pain was commonly present in dental practitioners. Among dental practitioners, whose working hours per day was 6-10 hours have neck pain. It is suggested that they should take breaks in their routine work.

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