

Impaired Quality of Life Among Dentists Due to Neck Pain

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ABSTRACT

Objective: To determine the frequency of neck pain among dentists and its association with impaired quality of life (QoL).

Study Design: A cross-sectional study.

Place and Duration of Study: This study was conducted at the OPD of dental department at Multan Medical and Dental College, Multan, from October 2022 to May 2023.

Methods: This research was conducted on 220 dentists selected by non-probability convenient sampling technique without any gender discrimination. Disability due to neck pain was measured using the Neck Disability Index (NDI), gender-stratified Spearman Rank Correlation Coefficient was used to assess the correlation between neck pain intensity and disability due to neck pain. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 23.

Results: A total of 220 dentists respond the questionnaire. 27 out of 78 male and 43 out of 142 female are healthy while 51 male and 99 female feel neck pain. 65% male can't read during NP while 64% female have this disability. Similarly, headache increases NP intensity in female 66% while it is less 58% in male. 44% female and 35% male can't do personal care during neck pain.

Conclusion: Neck pain is common in dentists due to their postural demand in their working environment and it has a significant impact on dental practices. Neck pain had great impact on the daily functions and quality of life of the dentists.

Key Words: Neck Pain, headache, Personal Care, Quality of life.

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INTRODUCTION

The pain in and around the cervical spine is called Neck pain and it is a common symptom of many abnormal postural and medical conditions. Sometimes it is felt in the neck called axial pain but sometimes it radiates and called Radicular pain¹. The neck muscles can be easily strained like hunching over your work bench. Sometimes it leads to the stiff neck and reduce the range of motion of neck movements. Etiological variables, including bad posture, anxiety, depression, the strain of the neck, and sporting and occupational activities are generally underestimated and complicated².

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Neck pain may result from a sudden injury or it may develop slowly over times for example due to the poor posture, wear and tear injuries and from overuse injuries³. Postural neck pain is a very uncomfortable condition that leads to a lot of problems in the daily routine and the most bothersome problem is the sleeping disorders. This results in generalize fatigue in body. Any abnormality of soft tissue of cervical spine like swelling, or damage may cause pain or rigidity of the neck⁴.

Neck pain is very common in dentists. In a study dentists reported 83.8% neck pain⁵. Some studies also show that duration of work per day directly associated with neck pain. Instrument size in the field of dentistry has impact on neck posture which leads to shoulder and wrist/hand pain⁶. Psychosocial factors are another major cause for poor posture for dentists. Regular physical exercise was associated with decreased neck pain⁷.

The majority of dentists do not undertake specific exercises to prevent neck, shoulder, and back pain. Regularly completing specific workouts can help to reduce the prevalence and severity of these problems⁸. There are several predisposing factors for neck pain among dentists. The dentists burden the lumbar and cervical spine by bending and extending their torso and neck during working hours. They frequently use small tools during their oral cavity procedure⁹. They usually

work in tiny areas like anatomical chair, dental unit, equipment all are present in same room. Their wrong working positions are main causes of neck pain. With the passage of time, these abnormal positions lead to the postural deformities in dentists¹⁰. Dentists are a vulnerable group in the working world with multiple externally acting risk factors for postural problems specifically the low-back and neck discomfort. The wrong working postures adopted by dentists can contribute to pain in neck and also is a leading cause of forward head posture¹¹.

In addition, dentists are usually exposed to such health complications during university duration, which leads them to the early development and chronic propagation of postural issues¹². The predominance of musculoskeletal diseases (MSDs), including postural neck pain is well recognized in the dentistry profession. However, very little research has been done on MSD or postural risk in the dentistry students¹³.

The findings from this study could contribute to improving occupational health standards in dentistry and serve as a basis for further research on interventions that could alleviate neck pain and enhance the QoL of dentists.

METHODS

A cross-sectional study was conducted at the OPD of dental department at Multan Medical and Dental College, Multan, from October 2022 to May 2023. Dentists were selected using a non-probability convenient sampling technique, with no gender discrimination. Dentists with other chronic ailments, mental disorders, or dentofacial anomalies were excluded from the study. The participants ranged in age from 30 to 50 years.

Written informed consent was obtained from all participants. Disability due to neck pain was measured using the Neck Disability Index (NDI), which consists of 10 items, each scored from 0 to 5, with a maximum total score of 50. Each item contains six statements that represent varying levels of severity for specific symptoms. The scores from all 10 items are summed to produce a single NDI score. A score of 0–4 indicates no disability, 5–14 indicates mild disability, 15–24 indicates moderate disability, 25–34 indicates severe disability, and 35–50 indicates complete disability. Pain intensity by gender was assessed using cross-tabulation, as was the relationship between pain intensity and variables related to consequences of neck pain, such as headache, difficulty reading, and personal care.

A gender-stratified Spearman Rank Correlation Coefficient was used to assess the correlation between neck pain intensity and disability due to neck pain. To examine the strength and association between neck pain intensity/disability and variables such as headache, reading difficulties, challenges in weight lifting, and personal care, a logistic regression model was

constructed. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 23.

RESULTS

From 220 study cases, 78 (35.5%) were males and 142 (64.5%) were females. Personal care parameters were shown in the Table. No. 1. It was seen that, of the 220 cases, 150 (68.2%) suffered from neck pain, 97 (44.1%) felt difficulty in personal care, 171 (77.7%) could not lift weight easily, 190 (86.4%) felt pain when read, 163 (74.1%) felt headache while reading, 12 (5.5%) faced difficulty when concentrating, 176 (80.0%) felt pain when to do work, 50 (22.7%) had worst experience when driving, whereas sleeping was worst in 3 (1.4%) cases. Further, recreation was worst in 8 (3.6%) cases. (Table. No. 1).

According to Neck disability Index score, 183 (83.2%) cases had disability, and 37 (16.8%) cases had not disability. (Figure. 1). Association of NDI score with effect modifiers were shown in Table. No. 2. It was seen that females had more disability according to NDI score than males, 129 (70.5%) and 54 (29.5%), respectively. ($p < 0.001$). According to pain intensity, most of the cases 144 (78.7%) had suffered from neck pain and had disability with NDI score. ($p < 0.001$). There were 86 (47.0%) cases who had disability and normal in personal care, whereas 97 (53.0%) cases had disability and difficulties to do personal care. ($p < 0.001$). There were 166 (90.7%) cases who could not lift weight and had disability whereas only 17 (9.3%) cases of disability in NDI score and could easily lift weight. ($p < 0.001$). Further, most of the cases 169 (92.3%) had disability in NDI score, felt pain while reading whereas 14 (7.7%) cases had disability in NDI score felt no pain while reading. ($p < 0.001$). (Table. No. 2).

Table. No. 1: Gender and personal care parameters of the study cases

Variable	Frequency	Percentage
Gender		
Male	78	35.5
Female	142	64.5
Pain Intensity		
Healthy	70	31.8
Neck Pain	150	68.2
Personal Care		
Normal	123	55.9
difficult to do	97	44.1
Weightlifting		
Easily lift weights	49	22.3
Can't lift weights	171	77.7
Reading		
No Pain	30	13.6
Feel Pain while reading	190	86.4
Headache		
No Pain	57	25.9

Feel Pain while reading	163	74.1
Concentration		
Mild	153	69.5
Moderate	47	21.4
Severe	8	3.6
Very severe	12	5.5
Work		
No Pain	44	20.0
Feel Pain	176	80.0
Driving		
Mild	110	50.0
Moderate	46	20.9
Severe	14	6.4
Worst	50	22.7
Sleeping		
Mild	189	85.9
Moderate	17	7.7
Severe	11	5.0
Worst	3	1.4
Recreation		
Mild	179	81.4
Moderate	21	9.5
Severe	12	5.5
Worst	8	3.6

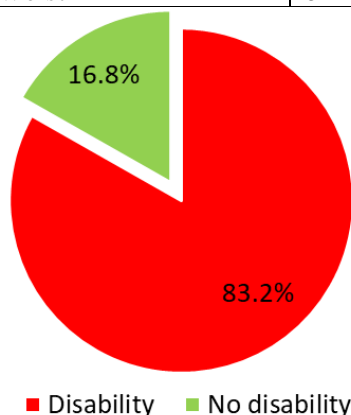


Figure No. 1: Neck Disability Index Score

Table. No. 2: Association of Neck Disability Index Score with effect modifiers

Variable	Neck Disability Index Score		Test of sig.
	Disability	No disability	
Gender			
Male	54 (29.5%)	24 (64.9%)	$\chi^2=16.81$, d.f=1, p<0.001
Female	129 (70.5%)	13 (35.1%)	
Pain intensity			
Healthy	39 (21.3%)	31 (83.8%)	$\chi^2=55.36$, d.f=1, p<0.001
Neck Pain	144 (78.7%)	6 (16.2%)	

Personal care			
Normal	86 (47.0%)	37 (100.0%)	$\chi^2=35.08$, d.f=1, p<0.001
Difficult to do	97 (53.0%)	0 (0.0%)	
Weightlifting			
Easily lift weights	17 (9.3%)	32 (86.5%)	$\chi^2=105.95$, d.f=1, p<0.001
Can't lift weights	166 (90.7%)	5 (13.5%)	
Reading			
No Pain	14 (7.7%)	16 (43.2%)	$\chi^2=33.11$, d.f=1, p<0.001
Feel Pain while reading	169 (92.3%)	21 (56.8%)	

DISCUSSION

This cross-sectional study was conducted to find out the impact of neck pain on quality of life among dentists. In this study 74.1% dentists felt headache while reading. A study performed by Nageshet al¹⁴ in 2016 on prevalence of headache among dentist showed similar results to our study. According to their results, the headache was found to be prevalent in 87.1% of the subjects included in the study. Females (91.9%) were more frequently affected by headaches than males (87.1%). Similarly, results were found in our study that the prevalence of headache was more in females 64.5% than males 35.5%.

Another study was performed by Jamil et al¹⁵ in 2023 on cervicogenic headache among dentists working in Lahore Medical and dental college their study concluded that cervicogenic headache is present in 30.4% dentists, their results were different from our study.

Another study was conducted by Baber et al¹⁶ in 2022 for measuring neck pain among dentist. According to their results The NDI score shows that 44.7% of the dentists showed mild disability and 33.8% dentist showed moderate disability. Similar results were found in our study, the NDI score shows that 43.3% of the dentists showed mild disability and 33.8% dentist showed moderate disability. (18)The results of our study were quite different from the study done by Kawtharani et al¹⁷ in 2023 for measuring neck pain among dentist. Their results showed that the prevalence of neck pain among dentists was 86.8%. According to our study prevalence of neck pain among dentists was 68.6 %.

Another study was conducted by Ijaz et al¹⁸ in 2016 for measuring the frequency of neck pain among dentist. According to their results The NDI score shows that 23.7% of the dentists showed mild disability and 28.2% dentist showed moderate disability. 28.2% could lift heavy weights but experienced pain in doing so, 20.2% dentists reported that episodes of pain

prevented them to do so. 38.8% dentists had slight pain during reading, 21.8% had moderate pain, 11.2% could not read books due to moderate pain and 1.6% had severe pain while reading so could not do so. Their results were quite comparable with our results that 65% male dentists cannot read during neck pain while 64% females have this disability. Similarly, headache increases neck pain intensity in females 66% and in males it is 58%. 44% females and 35% males cannot do personal care during neck pain.

Al Wassan et al¹⁹ surveyed 204 dentists and dental auxiliaries (87 males, 117 females) in Riyadh, Saudi Arabia, to assess postural problems. Results showed 54.4% complained of neck pain and 73.5% of back pain. Only 37% of those with back pain sought medical help. A study conducted by Jabbar et al²⁰ reported that the prevalence of musculoskeletal symptoms among dentists in Saudi Arabia is notably high. The most frequently reported issues were pain, particularly in the neck, back, and shoulders, as well as headaches. These findings highlight the significant burden of physical discomfort experienced by dental professionals in the region, likely due to the repetitive and posture-related demands of their profession.

CONCLUSION

Neck pain is common in dentists due to their postural demand in their working environment and it has a significant impact on dental practices. According to the study, the main ergonomic variables linked to the growth of neck problems are dentists' incorrect body position and lack of physical movement. All these factors may lead to impaired quality of life among dentists.

Author's Contribution:

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Drafting or Revising Critically:	Nida Aslam, Muhammad Awais Khan, Zobia Atif, Huma Tahir
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

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