

Prevalence of Neck pain in Dentists of Lahore Sectional Survey

Dr. Mohsin Majeed*, Tanveer ul Hassan**, Dr.Zainab Javed***,
Dr.Aqsa Ilyas, Dr. Nasir Muzaffar, Adan Nayyab, Danish Malik,
Muhammad Adeel Baig

“University Institute of Physical Therapy”
University of Lahore

DOI: 10.29322/IJSRP.8.11.2018.p8303

<http://dx.doi.org/10.29322/IJSRP.8.11.2018.p8303>

ABSTRACT

Background:

Work related diseases are global. Dentists who work in standing position believe that they are at a higher risk for neck pain due to bad postures. Neck pain is major concern nowadays with many contributing factors.

Objective:

The main objective of this study was to determine the prevalence of neck pain in the Dentists of Lahore.

Methods:

A cross-sectional survey was undertaken to find out the prevalence of neck pain in 211 dentists in which 141 were Males and 70 were females from different hospital and private clinics of Lahore. Numeric pain,

Rating scale and Neck disability index were used as a tool to collect data. The data was analyzed statistically by SPSS software.

Results:

120(56.9.1%) dentists experienced neck pain while 91(43.1%) were without neck pain. The means score of numeric pain rating scale is 2.36 ± 2.49 and for neck disability index is 12.38 ± 10.41 .

Conclusion:

The study concluded that dentists are moderate of developing neck pain due to repetitive bad posture during clinical work.

KEYWORDS: Neck Pain, Dentists, Prevalence, MSD (Musculoskeletal disorder).

Introduction

Dentistry is one of the most demanding fields as it requires physical and mental alertness. The physical characteristics comprised of maintaining a good posture, vision, hearing ability, motor and psychological skills for a period of time during working hours. They are most likely to develop problems like musculoskeletal, hearing or vision problem and allergies. One has to adapt the surrounding environment to avoid pain, disability or sickness.¹

There are some factors including changes in curvatures of spine, imbalance in muscles, bad posture, poor work techniques that also causes pain in spine.²The sign and symptoms of musculoskeletal disorders are disability and pain in joints, tendons, ligaments and other soft tissue structures. The work of a dentist require highly demanding posture of body with neck in flexion and rotation that put extra load on neck and surrounding structures. As the duration of static posture and repetitive movements increase, an increase in neck pain, muscular imbalance and instability can be observed. Dentists have to focus on maintaining static and restricted neck, back and head position due to nature of work. This static posture for a longer duration causes pain.³ 2013 conducted a study to find out the prevalence and distribution of musculoskeletal disease (MSD) in dental practitioners. 73 participants had completed the questionnaire. The results of the study showed that 78% of MSD frequency in which most frequent region was neck pain 52%.⁴

A cross sectional study was conducted in 2014 by Feng B et al in China. The objective of the study was to find out the occurrence of work related musculoskeletal issues of the neck and upper extremity

And potential risk factors that are associated with the profession of dentist in China. Total 304 participants were given forms, 272 subjects in which 121 females and 151 males filled. The musculoskeletal symptoms in the upper limb and neck were concluded by visual analogue scale. The study showed that 83.8% dentist had neck pain.⁵

A cross sectional study was conducted by Rungarun Kriangkrai et al to find out the self-reported prevalence and risk factors of musculoskeletal pain in final year dental students of Naresuan University of Thailand. Total 68 students were enrolled in this study. A modified Nordic Musculoskeletal Questionnaire was used to find pain. The prevalence of neck pain was 82.35% in participants, the main cause of pain was bad posture during working hours in university and Suggested to do work in good postures and exercises to minimize the risk of occurrence of neck pain and musculoskeletal problems.⁶

Materials and Methods

It was cross sectional survey, Data was collected from the dentists working in Lahore experience of them at least one year. Those dentists were included who had age of 22 to 50 years in public and private clinical sector. Exclusion criteria were specific neck pain and dentist working in academic sector. Study was completed in 6 months. Sample size of 211 respondents was calculated using WHO sample size calculator⁷. The population proportion used was 0.27⁸, confidence level 0.95 and precision of estimate 0.06. Convenient sampling technique was used to collect the data. Questionnaire used in the present study comprised of three sections; Demographics,

Numeric pain rating scale² and Neck disability index⁹. Test retest reliability of NPRS was 0.79 to 0.92 and Cronbach alpha to be 0.88¹⁰. Neck disability index has test retest reliability of 0.96 (rehab measures ref) and Cronbach alpha 0.89¹¹. Data was collected in 6 months from workers who are working in different offices of Lahore, Pakistan. Consent was taken from the participant's with on-specific neck pain and data was collected. Further, data was compiled and arranged for statistics analysis in SPSS v23.

Results:

The prevalence of neck pain among the participants was 56.9%. The total participants were 211 in which 120(56.9%) with No Pain and 91(43.1%) have pain in the neck region. There were 141 male and 70 female in this study. 111(52.6%) subjects were between 21 to 30 years, 59(28.0%) between 31-40 years and 41(19.4%) were between 41-50 years. 91 (43.1%) with no disability, 16 (7.6%) with mild disability, 84(39.8%) with moderate disability, 10 (4.7%) with severe disability and 10(4.7) with complete disability. 91 (43.1%) with no pain, 55 (26.1%) with mild pain, 50 (23.7%) with moderate pain and 15 (7.1%) with severe pain calculated.

TABLE-1:
FREQUENCY DISTRIBUTIONS OF GENDER, AGE, NDI, NRS

Variables		Frequency	Percent
Gender	Male	141	66.8
	Female	70	33.2
Age	21-30	111	52.6
	31-40	59	28.0
	41-50	41	19.4
NDI	No Disability	91	43.1
	Mild Disability	16	7.6
	Moderate Disability	84	39.8
	Severe Disability	10	4.7
	Complete Disability	10	4.7
NPRS	No Pain	91	43.1
	Mild Pain	55	26.1
	Moderate Pain	50	23.7
	Severe Pain	15	7.1

The mean age of the respondents was 32.95 ± 7.72 years. The mean experience of the respondents was 7.95 ± 7.02 years. The mean NRS of the respondents was 2.36 ± 2.49 . The mean NDI of the respondents was 12.38 ± 10.41 .

TABLE -2

DESCRIPTIVE STATISTICS FOR AGE, EXPERIENCE, NDI, NRS

Variables	Age	Experience	Neck disability index	Numeric Rating Scale
Mean	32.95	7.95	12.38	2.36
Std. Deviation	7.72	7.02	10.41	2.49

The total male dentists were 141(66.8%), 54(25.6%) was no pain and 87(41.2%) pain calculated. The total female dentists were 70(34.2%), 37(17.5%) without pain, 33(15.6%) with pain calculated. Total subject pain were 108(51.2%). 55(26.1%) subjects with neck pain were 21-30 years in the first category, 34(16.1%) were between 31-40 years in the second category. The third category was for persons between 41-50 years of age were in 31(14.7%) participants were recorded. Total pain were 120(46.9%). 57(27.0%) subjects with neck

pain were 1-5 years of experience in the first category, 19(9.0%) were between 6-10 years of experience in the second category, 16(7.6%) were between 11-15 years of experience in the third category and 14(6.6%) were between 16-20 years of experience in the fourth category. The fifth category was for persons between 21-25 years of experience were in 14(6.6%) participants were recorded.

Table-3

CROSS-TABULATION BETWEEN AGES, EXPERIENCE, GENDER WITH NECK PAIN

Variables		Neck Pain		P value	Chi
		No Pain	Pain		
Age	21-30	56	55	P>0.05	
	31-40	25	34		
	41-50	10	31		
Experience	1-5	52	57	P>0.05	
	6-10	17	19		
	11-15	13	16		
	16-20	7	14		
Gender	21-25	2	14	P>0.05	
	Male	54	87		
	Female	37	33		

DISCUSSION

Dentistry is one of the most demanding fields as it requires physical and mental alertness. The physical characteristics comprised of maintaining a good posture, vision, hearing ability, motor and psychological skills for a period of time during working hours. They

are most likely to develop problems like musculoskeletal, hearing or vision problem, allergies. One has to adapt the surrounding environment to avoid pain disability or sickness¹. Out of 211 dentists, 120 participants experienced neck pain during work in clinical practices. A cross sectional study was conducted to analyze the prevalence and distribution of musculoskeletal disorders in dentists in India. 73 dentists participated in the study. The study concluded that almost 78% at least suffered from a single musculoskeletal disorder symptom. So the prevalence or musculoskeletal pain among dentist was high. 52% had symptoms in neck followed by 41% who had symptoms in low back and 29% in shoulders.⁴ Over all prevalence of neck pain among dentists in Lahore was 56.9% due to stress during working hours.

A study was conducted to describe the prevalence of neck pain in dentists of India. The study included 74 dentists that were randomly selected. One year prevalence of neck pain was 76% and point prevalence was 27%. The mean visual analogue scale score for neck pain was 2.48. The study concluded that the prevalence of neck pain among in dentist was high.⁸

In this current study, prevalence of neck pain in dentist was 56.9% (120 participants). The ratio of gender was 141 males and 70 females.

A study was conducted to understand the prevalence of musculoskeletal disorders amongst pediatric dentists. 270 dentists were randomly selected for the study. The study concluded that the prevalence of neck and back pain in pediatric dentists is higher than in general population³.

Another study was conducted to detect the health status of dentists of New Zealand. General health condition of dentists was good but level of physical fitness was not good enough. The prevalence of musculoskeletal disorders was and these impact their quality of life.

The study suggested that decreasing weight and accurate and good posture working methods might decrease musculoskeletal disorders and pain and might improve quality of life. In this study the objective was to determine the prevalence of neck pain among the dentists in Lahore. A cross-sectional survey was undertaken to detect the Prevalence of neck pain among 211 dentists in which 141(66.8%) were Males and 70(34.2%) were females. The study included 211 dentists from Lahore. 120(56.9%) experienced neck pain while 91(43.1%) were free from neck pain. The study concluded that dentists are moderate risk of developing neck pain due to repetitive ill posture during clinical work.

Conclusion

This study indicates that dentists are developing neck pain due to repetitive ill posture during their clinical work.

Suggestion

Require frequent Flexion and extension of cervical spine. We can suggest implementation of better working postures and prevention schemes i.e. exercises and used specialized design ergonomics chairs.

References:

1. Ayers K, Thomson W, Newton J, Morgaine K, Rich A. Self-reported occupational health of general dental practitioners. *Occupational Medicine* 2009; **59**(3): 142-8.
2. Hayes M, Cockrell D, Smith D. A systematic review of musculoskeletal disorders among dental professionals. *International journal of dental hygiene* 2009; **7**(3): 159-65.
3. Shetty SM, Shetty S, Hegde A, Babu N. Prevalence of Neck and Back Pain among Paediatric Dentists. *Nitte University Journal of Health Science* 2015; **5**(1): 45.
4. Muralidharan D, Fareed N, Shanthi M. Musculoskeletal disorders among dental practitioners: does it affect practice? *Epidemiology Research International* 2013; **2013**.
5. Feng B, Liang Q, Wang Y, Andersen LL, Szeto G. Prevalence of work-related musculoskeletal symptoms of the neck and upper extremity among dentists in China. *BMJ open* 2014; **4**(12): e006451.
6. Arthisri A, Jain A, Philip J, Venkata Krishnan C, Chandran C. Site Predilection of Occupational Musculoskeletal Complaints among Dental Practitioners in Chennai City. *Biol Med (Aligarh)* 2016; **9**(373): 2.
7. Lwanga SK, Lemeshow S, Organization WH. Sample size determination in health studies: a practical manual/SK Lwanga and S. Lemeshow. Sample size determination in health studies: a practical manual/SK Lwanga and S Lemeshow; 1991.
8. Bansal A, Bansal P, Kaur S, Malik A. Prevalence of neck disability among dental professionals in North India. *Journal of Evolution of Medical and Dental Sciences* 2013; **2**(45): 8782-8.
9. Kriangkrai R, Sirimala N, Nathamtong S, Choden K, Taechasubamorn P. Self-reported prevalence and risk factors of musculoskeletal pain in Thai dental students. *International Dental Journal of Students Research* 2016; **4**.
10. Herr KA, Spratt K, Mobily PR, Richardson G. Pain intensity assessment in older adults: use of experimental pain to compare psychometric properties and usability of selected pain scales with younger adults. *The Clinical journal of pain* 2004; **20**(4): 207-19.
11. Shaheen AAM, Omar MTA, Vernon H. Cross-cultural adaptation, reliability, and validity of the Arabic version of Neck Disability Index in patients with neck pain. *Spine* 2013; **38**(10): E609-E15.
12. Saavedra-Hernández M, Castro-Sánchez AM, Cuesta-Vargas AI, Cleland JA, Fernández-de-las-Peñas C, Arroyo-Morales M. The contribution of previous episodes of pain, pain intensity, physical impairment, and pain-related fear to disability in patients with chronic mechanical neck pain. *American Journal of Physical Medicine & Rehabilitation* 2012; **91**(12): 1070-6.
13. Loghmani A, Golshiri P, Zamani A, Kheirmand M, Jafari N. Musculoskeletal symptoms and job satisfaction among office-workers: A Cross-sectional study from Iran. *Acta medica academica* 2013; **42**(1): 46-54.

QUESTIONNAIRE

Name: _____ Experience: _____ Age: _____

Gender: Male/ Female

Neck Disability Index¹².

This questionnaire is designed to enable us to understand how much your neck pain has affected your ability to manage everyday activities. Please answer each Section by circling the **ONE CHOICE** that most applies to you. Please circle the one choice which closely describes your problem right now.

Section 1 – Pain Intensity

- A. I have no pain at the moment.
- B. The pain is mild at the moment.
- C. The pain comes and goes and is moderate
- D. The pain moderate and does not very much.
- E. The pain is severe, but comes and goes.
- F. The pain is severe and does not very much.

Section 2 – Personal Care

- A. I can look after myself without causing extra pain.
- B. I can look after myself normally, but it causes extra pain.
- C. It is painful to look after myself and I am slow and careful.
- D. I need some help, but manage most of my personal care.
- E. I need help every day in most aspects of self-care.
- F. I do not get undressed; I wash with difficulty and stay in bed.

Section 3 – Lifting

- A. I can lift heavy weights without extra pain.
- B. I can lift heavy weights but it causes extra pain.
- C. Pain prevents me from lifting heavy weights off the floor, But I can manage if they are conveniently positioned (e.g. on a table)
- D. Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned.
- E. I can lift only very light weights.
- F. I cannot lift or carry anything at all.

Section 4 – Reading

- A. I can read as much as I want to with no pain in my neck.
- B. I can read as much as I want to with slight pain in my neck.
- C. I can read as much as I want to with moderate pain in my neck.
- D. I cannot read as much as I want to because of moderate pain in my neck.
- E. I cannot read as much as I want to because of severe pain in my neck
- F. I cannot read at all.

Section 5 – Headache

- A. I have no headaches at all.
- B. I have slight headaches that come infrequently.
- C. I have moderate headaches that come infrequently.
- D. I have moderate headaches that come frequently.
- E. I have severe headaches that come frequently.
- F. I have headaches almost all the time.

Section 6 – Concentration

- A. I can concentrate fully when I want to with no difficulty.
- B. I can concentrate fully when I want to with slight difficulty.
- C. I have a fair degree of difficulty in concentrating when I want to.
- D. I have a lot of difficulty in concentrating when I want to.

Section 7 – Work

- A. I can do as much work as I want to.
- B. I can do my usual work but no more.
- C. I can do most of my usual work, but no more.
- D.

- E. I cannot do my usual work.
- F. I can hardly do any work at all.
- G. I cannot do any work at all

Section 8 -- Driving

- A. I can drive my car without any neck pain.
- B. I can drive my car as long as I want with slight pain in my neck.
- C. I can drive my car as long as I want with moderate pain in my neck.
- D. I cannot drive my car as long as I want because of moderate pain in my neck.
- E. I can hardly drive at all because of severe pain in my neck.
- F. I cannot drive my car at all.

Section 9 – Sleeping

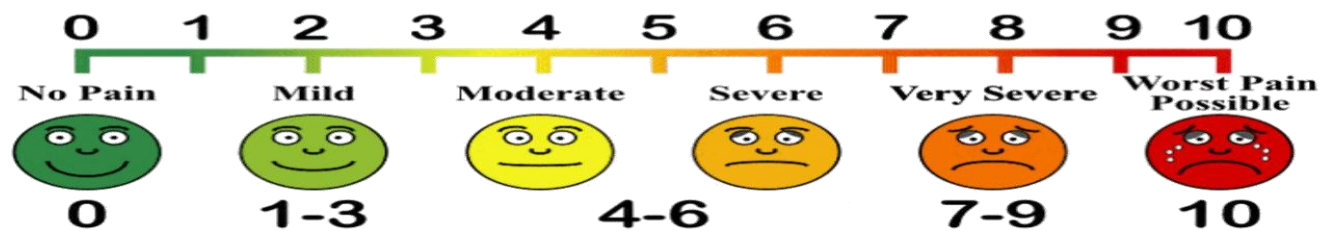
- A. I have no trouble sleeping.
- B. My sleep is slightly disturbed (less than 1 hour sleepless).
- C. My sleep is mildly disturbed (1-2 hours sleepless).
- D. My sleep is moderately disturbed (2-3 hours sleepless).
- E. My sleep is greatly disturbed (3-5 hours sleepless).
- F. My sleep is completely disturbed (5-7 hours sleepless)

Section 10 – Recreation

- A. I am able to engage in all my recreational activities, with
- B. no neck pain at all.
- C. I am able to engage in all of my recreational activities, with
- D. Some pain in my neck.
- E. I am able to engage in most, but not all of my usual recreational
- F. activities because of pain in my neck.
- G. I am able to engage in only a few of my usual recreational
- H. activities because of pain in my neck.
- I. I can hardly do any recreational activities because of pain
- in my neck.

Section 11 – Numeric Rating Scale (NRS)¹³

G. Try and assign a number from 0 to 10 to your current pain level. If you have no pain, use a 0. As the numbers get higher, they stand for pain that is getting worse. 10 means the pain is as bad as it can be.



Authors:

Dr. Mohsin Majeed (DPT) MS Neurology University of Lahore

Email: I'd mohsinmajeed21@gmail.com

Contact: +92-333-6728483

Tanveer Ul Hassan BS.c (Hons) Medical Laboratory Technology

Medical Laboratory Technologist at Pak Medical Centre Sialkot

Email: I'd Tanveersahar41@gmail.com

Contact: +92-333-4669206

Dr.Zainab Javed (DPT) Azra Naheed Medical College Lahore.

Email I'd: Zainabbutt1@yahoo.com

Co-authors:

Dr.Aqsa Ilyas BS (PT) TDPT Lecturer at University of Lahore

Email I'd: aqsailyas9@gmail.com

Dr. Nasir Muzaffar (DPT) MS (Neurology) University of Lahore

Email I'd: nasirmuzaffar07@mail.com

Contact: +92-313-470080

Adan Nayyab BS (Hons) Chemistry University of Gujrat

Danish Malik BS (Hons) Biotechnology Virtual University

Email I'd: admmalik27@gmail.com

Contact: +92-317-7357435

Muhammad Adeel Baig BS (Hons) Biochemistry University of Gujrat Sialkot Campus

Email I'd: adeel.baig015@gmail.com

Contact: +92-336-4609198