

Original Article

# PREVALENCE OF NECK AND BACK PAIN AMONG PAEDIATRIC DENTISTS

Siddharth M Shetty<sup>1</sup>, Shreema Shetty<sup>2</sup>, Anoop Hegde<sup>3</sup> & Nirmal Babu<sup>4</sup>

<sup>1</sup>Associate Professor, <sup>2</sup>Post Graduate, <sup>3</sup>Senior Resident, Department of Orthopaedics, K S Hegde Medical Academy, <sup>4</sup>Assistant Professor, Department of Conservative Dentistry & Endodontics, A.B.Shetty Memorial Institute of Dental Sciences, Nitte University Mangalore, Karnataka, India.

Correspondence :  
Anoop Hegde

Post Graduate, Department of Orthopaedics, K.S. Hegde Medical Academy, Nitte University Mangalore - 575 018, Karnataka, India.  
Mobile : +91 99641 43600 E-mail : anoop.hegde@yahoo.co.in

## Abstract :

Occupational diseases are present worldwide. Dentists believe that they are at a higher risk for development of musculoskeletal disorders due to the postures attained at work. Hence, we conducted a study for understanding the prevalence of such ailments amongst the paedodontist population. We employed a cross-sectional study of 270 paedodontists who were selected at random and were asked to complete a self-administered questionnaire. The questions were about personal characteristics, job history, specific work habits and mostly pertaining to clinical dentistry with details of any recent occurrence of neck or back pain. Results tabulated showed a 79.6 % of the paedodontists reported having experienced at least one episode of neck or back pain in the immediate past 12 months. This value is way above the occurrence of similar complaints seen among the general population which is estimated to be around 55%. The study concluded indicating that the incidence of neck and back pain among dentists is higher than general population. This may be attributed to extreme postures that may be attained during the clinical work and which may be extreme in paediatric dentists.

Keywords: Low back pain, neck pain, dentistry, Paedodontist

## Introduction :

Locomotor system disorders are frequently seen in dentistry<sup>(1)</sup>. It is known that the most painful regions are the cervical and lumbar spine<sup>(2,3)</sup>. Factors associated

with professional work may predispose to back and neck pain. On account of the narrow visual field of the oral cavity, having to work with a limited scope of movement constitutes high risks for low back and neck pain<sup>(4)</sup>. It has

been demonstrated that tensely maintained asymmetric body posture is a risk for low back pain (LBP); and prolonged static neck position and repeated movements

are work-related risk factors for neck pain<sup>(5,6)</sup>. In the light of these findings, the aim of this study, is to investigate the risk factors associated with low back and neck pain in dentistry.

## Materials and Methods :

Using a simple random sampling method, 270 dentists were selected and asked to complete a self-administered questionnaire, 240 dentists completed and returned the questionnaire. The questions were about age, gender, job history, work characteristics mostly pertaining to dentistry including physical risk factors at work plus any report about the occurrence of low back pain (LBP) and neck pain, place and duration of employment, number of patients visited per month, time and duration of work per day and the posture of body while working,

Part of the questionnaire was allotted to lower back pain and/or neck pain and included questions about the same. These included duration of musculoskeletal complaint; complaints in the upper or lower limb (e.g., feeling pain, paresthesia, and numbness). The participants were also asked if they received any treatments. Their responses were categorized as either "no treatment," "drug," "exercise," or "physiotherapy."

Data were anonymously coded and entered into

Access this article online

Quick Response Code



aspreadsheet programme before being analysed using theSPSSsoftware.

12 Basicstatistics were calculated, including prevalence rates.Differences Prevalence of neck and back pain werecalculated usingthe chi-square test for categorical variables and by thestudent t-test for continuous variables. p-values below0.05 were considered statistically significant throughout.

Results :

Profile of respondents

Of the 270 dentists who answered the questionnaire:

Two hundred and forty questionnaires (88.8 per cent) were returned, fully or partiallycompleted.Missing data were excluded from the analysis. It was noted that:

- 1) 44.6%were male and 55.4% were female (Table 1).
- 2) The age group under the study ranged from 21-62 years. Mean age was 28.4 years (SD = 5.94years) (Table 2).
- 3) The years of work under the study ranged from 2-30 years. Mean being 3.440 (SD=4.8453) (Table 2)
- 4) The hours of work in a day ranged from 1-12 hours.Mean being 4.765(SD=1.7247) (Table 2)
- 5) Most dentists (80 per cent) reported having at least one MSD symptom in the past 12 months (Fig 1).
- 6) Pain in the spine was significantly more likely to be reported by younger dentists ( $p < 0.001$ ) and dentists with less years of experience.
- 7) Lower back pain, which interfered with daily activity, was significantly more likely to be reported by dentists who worked shorter hours ( $p < 0.05$ ).
- 8) 19% of dentists with pain underwent physiotherapy to get rid of pain

Over one-third of all dentists (36.4 per cent) had sought medical advice ortreatment of MSD during the previous 12 months.

Discussion :

So far, many factors for development of musculoskeletal pain have been studied.

Table 1. Distribution Of Age Groups By Gender For Dentists Surveyed

Age Group	Gender	
	Male	Female
20-29	33.75% (81)	46.66% (112)
30-39	8.33% (20)	6.25% (15)
40-49	1.66% (4)	1.25% (3)
50-59	0.83% (2)	0.83% (2)
60-69	0.00 (0)	0.41 (1)
Total	44.6% (107)	55.4% (133)

Table 2. Mean ( $\pm$ Sd) Age, Sex, Experience, Working Hours Per Day,

	Age	Sex	Years of Work	Hours of Work In A Day
N Valid	240	240	240	240
Missing	0	0	0	0
Mean	28.40	1.45	3.440	4.765
Std. Deviation	5.940	.498	4.8453	1.7247
Minimum	21	1	.2	1.0
Maximum	62	2	30.0	12.0



Figure 1

However, we studied additional variables that may cause musculoskeletal disorders. To the best of our knowledge, there is scarce information about the epidemiology of musculoskeletal disorders.

Health care work is recognised as a high riskjob for MSD; however most of the studieshave been carried out in specific groups ofhealthcare professionals such as dentists anddental hygienists, nurses, radiologists, ophthalmologists, and physiotherapists.The dental profession howeverhas one of the highest prevalence forMSD.<sup>16, -20</sup>

It has been proven that postures which may exert a higher pressure on intervertebral disk as well as prolonged spinal

hypomobility are among important factors leading to degenerative changes in the lumbar spine and subsequent LBP. Since such postures are not uncommon in daily practice of a dentist, some authors believe that they are at a higher risk of developing musculoskeletal disorders than other job groups<sup>7,8,14</sup> Nonetheless, our results showed that the prevalence of LBP and neck pain in dentists is very much higher than other study groups.

Al Wazzan, et al, in their study, reported that only 37% of those suffering back and neck pain sought medical treatment and concluded that these symptoms among dental personnel are not severe enough to ask for medications.<sup>15</sup>

Alice lai ,et al in their study reported that the prevalence of self-reported MSD among dental personnel is high. Several work-related factors have been identified to be associated with musculoskeletal symptoms in varying body

regions<sup>21</sup>

One limitation of this study is the lack of objective measurement methods.

It is also thought that individual psychological properties, such as stress intolerance, which would be expected to contribute to incidence and intensity of

locomotor pain needs to be included in future studies.

Conclusion:

It is understood that work duration and working postures are root cause of back and neck pain among the paedodontists. This study also highlights, the fact the incidence among dentistry to be higher than general population. We opine that the practice of dentistry is not per se an ignition for development of neck and low back pain, rather accelerates the process and increases the severity of symptoms due to the working posture.

#### References :

1. Szymanska J. Disorders of the musculoskeletal system among dentists from the aspect of ergonomics and prophylaxis. *Ann Agric Environ Med* 2002;9: 169-73.
2. Armstrong TJ, Lifshitz Y. Evaluation and design of jobs for control of cumulative trauma disorders. In: *Industrial hygiene science series: Ergonomic interventions to prevent musculoskeletal injuries in industry*. Chelsea: Lewis, 1987:73-87.
3. Diakow PRP, Cassidy JD. Back pain in dentists. *J Manipulative Physiol Ther* 1984; 7: 85-8.
4. Al Wazzan KA, Almas K, Al Shethri SE, Qahtani AI. Back and neck problems among dentists and dental auxiliaries. *J Contemp Dent Pract* 2001; 2: 17-30.
5. Alexopoulos EC, Stathi IC, Charizani F. Prevalence of musculoskeletal disorders in dentists. *BMC Musculoskeletal Disorders* 2004; 5: 16.
6. Yee T, Crawford L, Harber P. Work environment of dental hygienists. *J Occup Environ Med* 2005; 47: 633-9.
7. Chams H, Mohammadi SF, Moayyeri AR. Frequency and assortment of self-reported occupational complaints among Iranian ophthalmologists. *Med Gen Med* 2004;6(4):1.
8. Davatchi F, Tehrani Banihashemi A, Gholami J, et al. The prevalence of musculoskeletal complaints in a rural area in Iran: a WHO-ILAR COPCORD study (stage 1, rural study) in Iran. *Clin Rheumatol* 2009; 28:1267-74.
9. Szymanska J. Disorders of the musculoskeletal system among dentists from the aspect of ergonomics and prophylaxis. *Ann Agric Environ Med* 2002;9:169-73.
10. Ratzon NZ. Musculoskeletal symptoms among dentists in relation to work posture. *Work* 2000;15(3):153-8.
11. Lehto TU, Helenius HY, Alaranta HT. Musculoskeletal symptoms of dentists assessed by a multidisciplinary approach. *Commun Dent Oral Epidemiol* 1991;19(1):38-44.
12. Fish DR, Morris-Allen DM. Musculoskeletal disorders in dentists. *NY State Dent J* 1998;64:44-8.
13. Rundcrantz BL. Pain and discomfort in the musculoskeletal system among dentists. *Swed Dent J Suppl* 1991;76:1-102.
14. Alipour A. Neck and shoulder pain: prevalence, incidence and risk factors, the IKCO cohort study. Stockholm, Sweden. Department of Clinical Neuroscience, Section of Personal Prevention, Karolinska Institute. 2008. Available at <http://diss.kib.ki.se/2008/978-91-7409-126-7/thesis.pdf> (Accessed January 21, 2010).
15. Al Wazzan KA, Almas K, Al Shethri SE, Al-Qahtani MQ. Back and neck problems among dentists and dental auxiliaries. *J Contemp Dent Pract*
16. Smith DR, Nihashi M, Adachi Y, Koga H, Ishtake T. A detailed analysis of musculoskeletal disorder risk factors among Japanese nurses. *J Safety Res* 2006; 37:195-200.
17. Hayes MJ, Cockrell D, Smith DR. A Systematic review of musculoskeletal disorders among dental professionals. *Int J Dental Hygiene* 2009; 159-65.
18. Campo M, Weiser S, Koenig KL, Nordin M. Work-related musculoskeletal disorders in physical therapists: a prospective cohort study with 1-year followup. *Phys Ther* 2008; 88:608-19.
19. Dhimitri KC, McGwin G Jr, McNeal SF. Symptoms of musculoskeletal disorders in ophthalmologists. *Am J Ophthalmol* 2005; 139:179-81.
20. Boiselle PM, Levine D, Horwich PJ. Repetitive stress symptoms in radiology: prevalence and response to ergonomic interventions. *J Am Coll Radiol* 2008; 5:919-23
21. Alice lai 1, Kyi Oo yin 1, Shivanthi ballala 2, Lay Waikhin 3, Nayake ballala 1, Linnaing Prevalence of musculoskeletal disorders in the dental profession in Brunei Darussalam.