

ORIGINAL ARTICLE

PREVALENCE AND ASSOCIATED FACTORS OF BACK PAIN AMONG DENTISTS IN SOUTH GUJARAT

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ABSTRACT

Introduction: Dentistry is a high risk profession for developing back pain because high visual demands result in prolonged and affixed as well as uncomfortable postures.

Objectives: This study has been conducted to measure prevalence of pain related to dental work among dentists in Surat city and to identify the aggravating and relieving factors associated with the pain.

Methodology: In this cross sectional study, 154 randomly selected dentists were interviewed.

Results: Prevalence of pain was 63.6 percent. Back was the commonest site for pain. Prolong sitting was reported to be the most common aggravating factor for pain while correcting working post relieve pain in most. Most of the dentists did not take any treatment for pain which may adversely affect the condition and increases the severity of the pain. Regular daily exercise as well as physiotherapy are helpful to relieve pain but very few doing it regularly. Some dentists took pain killers while very few consulted orthopedic surgeons for treatments.

Keywords: Musculo-skeleton pain, dentist, exercise, posture

INTRODUCTION

A wide variety of deleterious work environmental factors are proved to affect the physical health of dentists or even aggravate their preexisting disorders.¹⁻³ Studies have shown that dentists report more frequent and worse health problems³ particularly musculoskeletal pain.⁴ There is increasing evidence that unique working conditions in dentistry can significantly affect the health of dentists.

Musculoskeletal pain, particularly back pain, has been found to be a major health problem for dental practitioners.⁴⁻⁶

Dentists commonly experience musculoskeletal pain during the course of their careers. While the occasional backache or neck-ache is not a cause for alarm, if regular pain or discomfort is ignored, the cumulative physiological damage can lead to an injury or a career-ending disability. The dentists are at high risk of neck and back problems due to the limited work area and impaired vision associated with the oral cavity. These working restrictions frequently cause a clinician to assume stressful body positions to achieve good access and visibility inside the oral cavity. Furthermore, dental procedures are usually long and require much more

concentration during work. Back pain is one of the most common and troublesome of complaints; its exact causes are legion and an exact diagnosis is often difficult.⁷

Some investigations have shown that the prevalence and location of pain and other symptoms may be influenced by posture and work habits, as well as other demographic factors.⁶

Several dental procedures require the dentist to assume and maintain positions that may have potential disadvantages for their musculoskeletal system.⁸ Their work with patients is often performed with their arms abducted and unsupported and the cervical spine flexed forward and rotated lead to high prevalence of pain in back, neck and shoulder region.^{5,9}

The study has been conducted to measure prevalence of pain related to dental work among dentists in South Gujarat and to identify the aggravating and relieving factors associated with the pain.

METHODOLOGY

The study was conducted in the month of January 2011. Taking a population of 600 dentists as registered

to local Indian Dental Association branch and prevalence of 80% of neck/back/shoulder pain among dentists⁶ the sample size was found to be 139 (using Epi-info 2002 software). For the calculation confidential limit of 95% and allowable error of 10% was considered.

Considering certain non response, 160 dentists were randomly selected from register of IDA.

All selected dentists were contacted and explained about the study details. Informed verbal consent was sought from all dentists and personnel interview was conducted for those who agreed for participation. A pretested pre-coded questioner was used to record information obtained during interaction with participants.

The data was analyzed using Epi Info 2002 software (Database and statistics software for public health professionals. July 2002). Statistical significance was said to be established when p value is < 0.05 at 95% confidence interval.

OBSERVATION AND DISCUSSION

Out of selected 160 dentists 154 dentists agreed to participate in the study. Profile of the study participants is described in table 1.

Mean age of participants was 29.4 years with standard deviation of 6.38. Mean weight of participants is 62.3 kg with standard deviation of 10.6. Current study revealed that 98 (63.6%) dentists had at least one kind of occupational pain either neck or back or shoulder or combination of it.

Table 1: Profile of dentist participated in the study

	No of dentists (%)
Gender	
Female	46 (29.9)
Male	108 (70.1)
Age group (years)	
<30	110 (71.4)
>30 - 40	36 (23.4)
>40	8 (5.2)
Weight (Kg)	
<=50	22 (14.3)
>50 - 60	50 (32.5)
>60 - 70	54 (35.1)
>70	28 (18.2)
Experience (years)	
<=5	90 (58.4)
>10	14 (9.1)
>5 - 10	50 (32.5)
Presence of pain	
Yes	98 (63.6)
No	56 (36.4)

Back, neck and shoulder are the most common sites of pain and it was reported by 75.5%, 42.9% and 22.5%

dentists respectively. Occurrence of pain at these sites was reported by many studies in the past.^{10, 6} Forty seven (95.9%) dentists out of 49 had got pain after starting dentistry. (Table 2)

Only four participating dentist reported that the pain was started during their under graduate study. For the rest, pain was started after completing their graduation.

Table 2: Distribution of pain according to site of pain among dentists (n=98)

Site of pain	No. of Dentist (%)
Neck pain	22 (42.9)
Back pain	74 (75.5)
Shoulder pain	22 (22.5)
Pain in wrist	2 (2.04)
Pain in leg	1 (2.04)

Ten dentists stated that they were feeling continuous pain during the whole day while remaining 89.8% had intermittent pain which was precipitated and or aggravated by certain factors. Prolong sitting posture was the most common factor (95.9%) which aggravate the pain.

On asking to describe severity of their pain, 42 (40.8%) dentist categories their pain in to mild category as pain didn't demand change in their working posture. 44 (44.9%) dentist classify their pain in to moderate category as the pain made them to change posture while working. The remaining 14 (12.2%) categories their pain in to severe pain as it compelled them to take rest in between.

Certain factors help the participants to relieve their pain which includes correct posture (46.9%), pause for few minutes (32.7%), muscle relaxing exercise (24.5%), analgesic drugs (10.2%), complete rest for a day (4.1%), etc (Table 3). Similar to this study, a study in Glasgow also found that improving or correcting posture can definitely help to relieve the pain.¹¹

Table 3: Factors aggravating or relieving pain (n=49)

Factors	No. of Dentist (%)
Pain aggravating factors	
Prolong sitting	94 (95.9)
Rotation	14 (14.3)
Lifting Heavy object	10 (10.2)
Driving	4 (4.1)
Trauma	2 (2.0)
Pain relieving factors	
Correct posture	46 (46.9)
Pause in working	32 (32.7)
Exercise	24 (24.5)
Analgesic drug	10 (10.2)
Short sitting	2 (2.0)
Ortho belt	2 (2.0)
Rest	4 (4.1)

Only few dentist remained absent in their clinical work due to pain. Six dentists remained absent for one day and 10 for more than 2 days.

Medical treatment and physiotherapy exercise play important role in management of such musculo-skeleton pain. Among the 98 study participants, 49% had never taken any treatment of their work related pain (table 4), which reveled ignorance in the participants. Ignorance of pain in early stage and continuous exposure to aggravating factor ultimately convert mild and moderate pain in to sever disabling pain. Regular exercise was found to be effective in preventing and relieving dental work related pain.¹²

Table 4: Measures taken by study participants to relieve pain (n=49)

Treatment	No. of Dentist (%)
No treatment	48 (49.0)
Drugs	16 (16.3)
Exercise	30 (30.6)
Physiotherapy	26 (26.5)
Other	12 (12.2)

RECOMMENDATION

1. Dentist should avoid working in bent position. Straight posture while working helps to prevent development of pain as it maintains the normal “s” shape of the spinal cord and reduces stress on inter vertebral discs.
2. Education of correct posture should be part of under graduate dental education.
3. Dentists should be encouraged to take regular breaks.

4. Dentist should do regular exercise especially relaxation exercise during their practice

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