www.jmscr.igmpublication.org
Impact Factor 5.244
Index Copernicus Value: 5.88
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: http://dx.doi.org/10.18535/jmscr/v4i6.61

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

# Low Back Pain among Dentists

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**ABSTRACT**

**Background.-** *Dentists often experience pain while working, especially in the lower back area. Back pain has been reported to be the most common type of discomfort in all occupational groups. Back pain has been reported to be the most common type of discomfort in all occupational groups. The study investigates the low back pain among dentists.*

**Method** *-A cross sectional study was conducted among 120 dentists were selected for the study who are in the age group of <30 and above years, in urban areas of the Lucknow district of Uttar Pradesh. Ex- post facto research design was used to obtain and analyze the data. For selection of the respondents, multi stage sampling technique was adopted. A questionnaire was used to investigate the low back pain among dentists. PAS software was used for statistical processing. Descriptive statistics i.e., percentage, mean and ANOVA was used to interpret the data. For multiple responses, percentage was calculated in terms of total responses therefore exceeds 100%.*

**Results:** *Among 120 dentists, 80% of dentists were suffering from LBP.*

**Conclusion:** *From the study, it can be concluded that the age of the respondent has an impact on low back pain. Long hours of work and no leisure time made the dentists sit in a restricted posture leading to severe low back pain among dentists. Therefore it is recommended to maintain proper body mechanics and use supportive devices like back belts, knee cap, and chair with back rest during patient care, stretching exercise, promotion of good ergonomic posture and general fitness.*

**Keywords:-** *Back pain, dentists, posture, occupational health problem*

## INTRODUCATION

Musculoskeletal pain, particularly back pain, has been found to be a major health problem for dental practitioners (Chowanadisai, Kukiattrakoon, Yapong, Kedjarune and Leggat, 2000; Marshall, Duncombe, Robinson and Kilbreath, 1997; Milerad and Ekenvall, 1990). The appearance, persistence and aggravation of pain could be related to a number of physical factors such as repetitive motion and posture (Rising, Bradford, Hursh and Plesh, 2005). Musculoskeletal disorders (MSD) are commonly found in occupations where people have to use high apprehension forces, like during the use of instruments where small muscle groups are used frequently in awkward postures for a prolonged period of time (Finsen, Christensen and Bake, 1998). Dental professionals have been documented to have a high percentage of musculoskeletal symptoms, as the dental profession is one of the visually dependent occupations which necessitates adoption of fixed postures for a prolonged period of time (Rundcrantz, Johnsson and Moritz, 1990). Other

professionals, like muscians (Marshall et al., 1997) and draftsmen (Chang, Bejjani, Chyan and Bellegarde, 1987) also have a high rate of MSD as their occupations also involve high visual demands. Studies demonstrated that there is direct relationship between postures used during clinical procedures and musculoskeletal disorders (Grandjean, 1988; Westgaard and Aaras, 1984). In order to get clear access to the oral cavity within the limited space available and impaired visibility within the patients oral cavity, dentists often adopt stressful body positions, which could aggravate neck and back problems (Finsen etal., 1998; Marshall et al., 1997; Shugars, Williams, Cline and Fishburne, 1984). 2 Clinical dental procedures involve the application of precise motor skills which are learned largely by observation, and involve intense hand-eye coordination and concentration. Mental stress during the procedures, the length of the consultation and possible pre-existing pain conditions may also contribute to dental practitioners' musculoskeletal pain (Al Wazzan, Almas, Al Qahtani and Al Shethri, 2001; Rundcrantz, 1991).

"An ache, pain or discomfort in the upper or lower back area whether or not it extends from there to one leg or both legs or to the shoulders (Kuorinaka, Johsson, Kilborn, Vinterberg and Biering-Sorenson, 1987)."

## OBJECTIVE

Keeping in view the significance of the problems, the present study was taken up to investigate Back pain among dentists.

## HYPOTHESIS

There exist is no significant difference in Low back pain among dentists.

## METHODS

**Study design:** Ex-post facto research design.

**Sampling technique:** For the selection of the respondents, multi stage sampling technique was adopted. .Data was collected from 120 respondents who were randomly selected from private (30 male, 30 female) and government hospitals (30 male, 30 female). The data was collected by General assessment form and low back pain scale developed by Nordic questionnaire by Kournika et al was used to investigate Low back pain among dentists.

**Statistical analysis:** PAS software was used for statistical processing. Intensity of low back pain was analyzed through frequency and percentage.

## RESULT AND DISSCUSION

**Table 1.-** Distribution of sample according to Low back pain among dentists.

| Low back symptoms | No | Yes |
|---|---|---|
| Every had low back trouble | 20(16.66) | 100(83.33) |
| Low back related accident | 70(70) | 30(30) |
| Changed job due to trouble | 100(100) | - |
| Trouble reduce work activity | 72(80) | 18(20) |
| Trouble reduce leisure activity | 42(46.66) | 48(53.33) |
| Sought professional treatment | 45(50) | 45(50) |
| Trouble in the last 7 days | 28(31.11) | 62(68.88) |
| Trouble # length of days having low back trouble in the last 12 month | | |
| 0 days | 10(10) | |
| 1-7 days | 28(28) | |
| 8-30 days | 29(29) | |
| More than 30 days, but not every day | 28(28) | |
| Every day | 5(5) | |
| **Total # of days of work prevented** | | |
| 0 days | 75(83.33) | |
| 1-7 days | 15(16.66) | |
| 8-30 days | - | |
| More than 30 days | - | |

(Figures in parenthesis indicate percentage)

The results of the Nordic questionnaire regarding low back symptoms are given in table 1. Of the 120 respondents, 100 (83.33%) reported having back trouble some time in their life. Of this 100, 30(30%) said they also had experienced a low back related accident in their life. No dentists reported changing jobs due to low back trouble. Out of the 100 respondents who experienced low back trouble in their life, 10 (10%) reported having no trouble in the last 12 months. However, 28 (28%) reported having had 1-7 days of low back trouble in the last 12 months, another 29 (29%) reported having 8-30 days with low back trouble, another 28 (28%) reported having more than 30 days with low back trouble and 5 (5%) reported having low back trouble every day. Of those who had low back trouble in the last 12 months, (n =90), 18(20%) reported having to reduce work activity, 48 (58.33%) reported having to reduce leisure activity and 45 (45%) sought professional treatment. In addition, 75 (83.33 %) said they did not miss any days of work in the last 12 months, and 15 (16.66) missed 1-7 days. 62 (68.88%) of the respondents with low back trouble in the last 12 months, experienced low back trouble in the last 7 days.

**(Samat, 2011)** A large majority of the respondents were female (79.1%) and Malays (98.0%). The age of respondents ranged from 22 to 56 years old. The prevalence of back pain was 44.9% (95% CI: 39.65, 50.07) with the highest prevalence found among dental technicians [52.4% (95% CI: 40.05, 64.71)]. After controlling for potential confounders, the significant risk factors associated with back pain were poor posture (OR 3.52; 95% CI: 2.22, 5.59) and being a dental auxiliary (OR 3.63, 95% CI: 1.81, 7.30)

**(NEWELL.T, 2003)** Reviewing the results shown in tables 3-4 to 3-6, out of the 59 percent who reported low back symptoms, 23 percent said they had low back related accidents. No orthodontist reported changing jobs due to low back trouble, Out of the 22 respondents who experienced low back trouble in their life, 3 (14%) reported having no trouble in the last 12 months. However, 6 (28%) reported having had 1-7 days of low back trouble in the last 12 months, another 6 (28%) reported having 8-30 days with low back trouble, another 6 (28%) reported having more than 30 days with low back trouble and 1 (5%) reported having low back trouble every day. Of those who had low back trouble in the last 12 months, (n = 19),2 (11%) reported having to reduce work activity, This was also confirmed by Rundcrantz et al. (1991) who reported symptoms in the low back, neck and shoulder had only a moderate impact on working ability. However, of paramount importance, the majority of orthodontists with low back, neck or shoulder symptoms (84%, 83% and 73% respectively) did not miss any days of work. 9 (47%) reported having to reduce leisure activity and 8 (42%) sought professional treatment. In addition, 16 (84%) said they did not miss any days of work in the last 12 months, and 3 (16) missed 1-7 days. 11 (58%) of the 19 respondents with low back trouble in the last 12 months, experienced low back trouble in the last 7 days. Likewise, out of the 56 percent with reported neck trouble, 36 percent said they had neck related accidents, and out of 47 percent reporting shoulder trouble, 53 percent said they had shoulder related accidents. This could possibly explain the higher percentages in this study from the previous studies of Shugars et al. (1984) and Lalumandier et al. (2001). That is, if the previous studies were able to rule out any low back, neck or shoulder trouble due to non work-related accidents. It is unclear in this study whether or not the accidents reported were work-related or not. However, of paramount importance, the majority of orthodontists with low back, neck or shoulder symptoms (84%, 83% and 73% respectively) did not miss any days of work. Basset's 1983 study also showed that 70 percent of the 62 percent reporting back pain never missed work because of back pain. Therefore, it can be concluded that although symptoms are high, the orthodontists are still managing to continue to perform their duties. However, it is of interest to note that from the responses given in tables 3-4 to 3-6 of the total number of missed days, the economical losses based on the average

orthodontist salary obtained from Human Resources Development Canada (HRDC) (2002), equates to a net loss per year of approximately $638 to $4,457 for low back trouble, $2,197 to $9,359 for neck trouble, =and $851 to $5,956 for shoulder trouble. The total net loss due to all MSDs equates to $3,696 to $19,771 annually, or $319 per day per person.

## CONCLUSION

Musculoskeletal disorders are inherent in dentistry. The main aim and objectives of this study were achieved. The findings indicate that the majority of dentistry indeed suffer from MSDs. LBP was the most common MSD experienced, followed by neck pain and then UBP. Low back pains is some of the most common symptoms throughout the general population, and are mainly caused due to long hours of dentistry in a restricted posture and age group of the respondent. Dentists spend longer time in dentistry than other professions. which pertain dentistry towards a higher risk for LBP and other low back disorders. Back pain has been recognized as the most prominent musculoskeletal problem experienced by the respondents. Such problem prevent dentists from their regular practices when they are suspected or have such kinds of problem. The pain in the lower body parts clearly indicate the defective design of the work space of the practices. dentists are at high risk for low back pain due to prolonged Sitting with a poor posture, poor dental practices, Psychosocial work factors, including perceptions of unfair treatment, job strain, and effort-reward imbalance, may contribute to low back pain among dentists. The results also suggest that early preventive strategies such as strengthening and stretching exercise, promotion of good ergonomic posture and general fitness, could be done to prevent or reduce the onset of MSD. This would clearly indicate that physiotherapy has a role to play in treatment, prevention, and health promotion amongst dentistry students.

## ACKNOWLEDGMENT

We would like to thank all the participants of the study.

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