

# Disorders of the Musculoskeletal System amongst Practicing Dentists

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## ABSTRACT

**Objective:** The aim of this study is to find out the frequency of musculoskeletal disorders among dentists working in Karachi and to establish factors associated with these disorders.

**Study Design:** Cross-sectional descriptive and analytical study

**Place and Duration of Study:** This study was conducted at Jinnah Medical and Dental College, Karachi from June 2014 to August 2014. The data was collected from three dental colleges of Karachi.

**Material and Methods:** The study was conducted at Jinnah Medical and Dental College. The study included 222 dentists working in different faculty positions from house officers to professors. The data was collected to find out the frequency of musculoskeletal disorders among dentists working in five different dental institutions of Karachi. A 22-item questionnaire was used to collect the data. The questionnaire was validated among a group of five dentists before using it for final survey. The questionnaire consisted of number of questions about age, gender, number of years in profession, pain in the back and neck, working hours per day, number of patients treated per day, any break taken between patients or not, working with assistant or not, working positions used, and medicines taken due to musculoskeletal pain. The data was stored in excel worksheet and was analyzed using SPSS.

**Results:** 222 dentists from five dental institutions of Karachi participated in the study. The study sample comprised of 90 males (40.5%) and 132 females (59.5%). The study highlighted that dentist who are involved in clinical practice are more prone to musculoskeletal problems accounting for about 79%. Amongst these 52.8% having backache, while 43.9% of the dentists having pain in the neck. The factors that were found to be significantly associated with musculoskeletal pain included; Dentists working without assistance experience more musculoskeletal problem approximately 47.6%. Dentist working more than 7 hours a day experienced more neck pain 40%.

**Conclusion:** In the light of this study it is apparent that musculoskeletal disorders are very common amongst the dentist working in Karachi. It is seen more in those who are working for long hours and those working without trained assistants. Breaks between patients and reducing the number of working hours as well as trained dental assistance can reduce the incidence of these disorders.

**Key Words:** Dentist, Musculoskeletal disorders, Back and Neck pain

## INTRODUCTION

The dental practice is challenging, the deleterious effects of work environmental affect the physical health of the dentists<sup>1,2,3</sup>.

Studies suggest that dentists are more vulnerable to certain disorders especially musculoskeletal disorders and in most cases these disorders are profession-related<sup>4,5</sup>.

Musculoskeletal pain has become a significant issue among dental professionals, as they often assume static positions that are uncomfortable, asymmetric and for long intervals. In dentistry, improper working habits, inconvenient posture as well as repetitive tasks, such as: root canal instrumentation, cavity preparation and filling, scaling or root planning, contribute greatly to musculoskeletal disorders<sup>6,7</sup>.

Approximately 81% of American dentists suffer from neck, shoulder and lower back pain<sup>8</sup>. Similar results were reported by Kerosuo et al.<sup>9</sup> who discovered that 70% of surveyed Scandinavian general dental

practitioners and 72% of orthodontists experienced musculoskeletal symptoms.

In Pakistan, a study in Peshawar says that almost 56% of dentists experienced backache and 41% had pain in the neck<sup>10</sup>

The aim of this study is to find out the frequency of musculoskeletal disorders among dentists working in Karachi and to establish factors associated with these disorders.

## MATERIALS AND METHODS

The cross-sectional descriptive and analytical study was conducted at Jinnah Medical and Dental College. The study included 222 dentists working in different faculty positions from house officers to professors. The data was collected to find out the frequency of musculoskeletal disorders among dentists working in five different dental institutions of Karachi. A 22-item questionnaire was used to collect the data. The questionnaire was validated among a group of five dentists before using it for final survey. The

questionnaire was designed to take approximately five minutes to complete. The questionnaire consisted of number of questions about age, gender, number of years in profession, pain in the back and neck, working hours per day, number of patients treated per day, any break taken between patients or not, working with assistant or not, working positions used, and medicines taken due to musculoskeletal pain.

The data was stored in excel worksheet and was analyzed using SPSS.

## RESULTS

222 dentists from five dental institutions of Karachi participated in the study.

The study sample comprised of 90 males (40.5%) and 132 females (59.5%). On the basis of age the study sample was divided in three groups; group 1= 25-34 years, group 2 =35-44 years and group 3 = 45-54 years. There were 196 (88.2%) dentists in group 1, 23 (10.2 %) in group 2 and only 3 (1.6 %) in group 3. The clinical experience was also divided into three groups 1-5 years, 6-10 years and more than 10 years. There were 72 % practitioners in 1-5 years group, 10% in 6-10 year group and 18 % had more than 10 years of clinical experience.

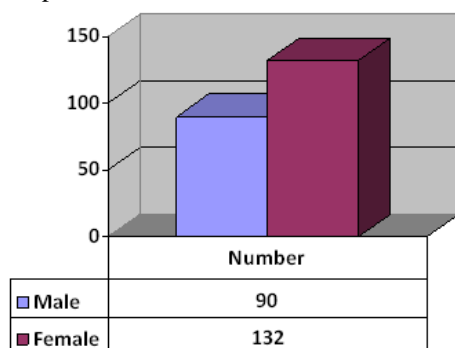


Chart No.1: %age of male & female patients

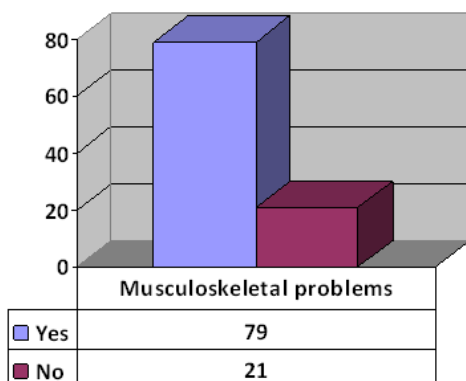


Chart No.2: %age of musculoskeletal problems

The study highlighted that dentist who are involved in clinical practice are more prone to musculoskeletal problems accounting for about 79%. Amongst these 52.8% having backache, while 43.9% of the dentists

having pain in the neck. Some had issues in multiple regions simultaneously that included neck and shoulder 5%, neck shoulder and lower back 13%, neck wrist and lower back 8%, knee and lower back 2%, knee wrist shoulder and elbow 2%, 2% all over symptomatic and 17% had no symptoms.

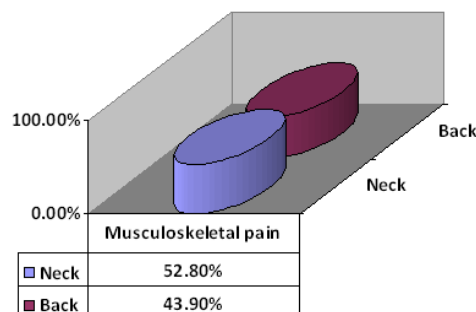


Chart No.3: %age of musculoskeletal pain in patients

The factors that were found to be significantly associated with musculoskeletal pain included; Dentists working without assistance experience more musculoskeletal problem approximately 47.6%. Dentist working more than 7 hours a day experienced more neck pain 40%. Breaks between patients, was insignificant and was not associated with any musculoskeletal problems in this study. The relationship of musculoskeletal disorder and the right or left hand dominance was insignificant in the study.

## DISCUSSION

In this study a questionnaire was used to determine the prevalence of musculoskeletal disorders amongst the practicing dentists in the seven dental institutions of Karachi. The purpose was to identify the relationship between musculoskeletal disorder and working time, working with or without assistant, breaks between patients and posture.

It is the first effort of its kind done in Karachi to determine the reasons for musculoskeletal pain among dental professionals in Karachi. A total of 222 dentists working in different faculty positions from house officers to professor level participated in the study. Our study showed that 79% of dentists experienced musculoskeletal pain. The result is comparable to a similar study conducted in Peshawar in 2012 which showed<sup>10</sup>. The high percentage of dentist showing sign of musculoskeletal pain is alarming. In literature the frequency for the dentist having back pain ranges from 35-55%<sup>6,7,8</sup>.

Our study highlighted that amongst the dentist having musculoskeletal pain 52.8% having backache, while 43.9% of the dentists having pain in the neck. Interestingly some had issues in multiple regions simultaneously that included neck and shoulder 5%, neck shoulder and lower back 13%, neck wrist and lower back 8%, knee and lower back 2%, knee wrist

shoulder and elbow 2%, 2% all over symptomatic and 17% had no symptoms

The results of our study found that there is directly proportional effect of the number of working hours to the development of musculoskeletal pain. The study suggests that 40% of the dentist working for are more than 7 hours per day had back or neck pain.

Working without a dental assistant can also lead to musculoskeletal disorders. In this study 47.6% of the dentist working without assistant had back, neck or combination pain. Our results also indicate that the complaints of back pain were strongly related to the number of patients treated daily.

These results show that the musculoskeletal disorders are seen more in dentist working for long hours and those working without assistance. We recommend that the dentist should either reduce the working hours or take long breaks between patients and should work with properly trained dental assistants to avoid or at least reduce the incidence of musculoskeletal disorders.

## CONCLUSION

In the light of this study it is apparent that musculoskeletal disorders are very common amongst the dentist working in Karachi. It is seen more in those who are working for long hours and those working without trained assistants. Breaks between patients and reducing the number of working hours as well as trained dental assistance can reduce the incidence of these disorders.

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