

## FREQUENCY OF MUSCULOSKELETAL DISCOMFORT AMONG DENTISTS IN KARACHI, PAKISTAN

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### ABSTRACT

*The aim of the study was to evaluate the frequency musculoskeletal pain & discomfort among the dental professionals. In this cross sectional study, the questionnaire based survey was done. A sample size comprised of 270 dental professionals who are working in different colleges, dental hospitals and private clinics of Karachi. This self-structured questionnaire was administered which consisted of 10 questions about pain in wrist, neck, back and shoulders that occur during dental procedures. The study showed that more than 90% of the dental practitioners are experiencing musculoskeletal pain and discomfort. Female dentists had a slightly higher frequency of pain and discomfort than the male dentists. Almost 42% of the dentists were suffering from backache, 23% had pain in neck and 14% had pain in wrist while 13% had shoulder pain. Back pain was the most common site followed by the neck. Dental professionals are most likely to have musculoskeletal pain and discomfort associated with their dental work due to lack of awareness regarding correct posture and lack of exercise.*

**Key Words:** Musculoskeletal Pain, Discomfort, Dentists.

### INTRODUCTION

Musculoskeletal disorders MSD occurs when there is inconsistency between human body capacities of

adapting physical work load during working environment, according to OSHA<sup>1</sup> and The World Health Organization defines an MSD as “a disorder of the muscles, tendons, peripheral nerves or vascular system not directly resulting from an acute or instantaneous event.”<sup>6</sup> MSD commonly experienced by dental professional, which restrain their professional activities that deleterious their financial competency as well as to their healthy lifestyle. In MSD, person experienced early symptoms of pain in affected part of the body that is overuse, repetitive movements, suboptimal lighting, poor positioning, genetic predisposition, mental stress, physical conditioning, age or has trauma to the soft or hard part of the body tissue due to inappropriate posture during working environment.<sup>2,3,4</sup>

It has been estimated that prevalence of musculoskeletal pain in dentistry ranges from 64% and 93%.<sup>5</sup> The most affecting region during the working environment for dentist are back and the neck with rage 36.3-60.1% and 19.8-85% respectively. Dentist are in higher risk of MSD for using their static posture, wrist and hand movements and contributed to occupational health problems, studies suggest that it is the significant

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problem for the dental profession and greatly added to low productivity, sick leave and early retiring from the profession.<sup>6</sup> The basic aim of the study was to evaluate the prevalence of developing musculoskeletal pain and discomfort among the dental professionals.

**METHODOLOGY**

A descriptive cross-sectional study was carried out to collect the data from dental professionals in both private and government dental institutes and clinics of Karachi during the months of March and April 2015.

Information about the age, gender, number of years in dental profession, type of vision, time interval between patients, number of patients treated per day, working days per week, working hours per day, any specific field of specialization, pain in the hand or wrist, neck, back and shoulders was obtained through the a self-structured close ended questionnaire.

A self-structured questionnaire was distributed to the study participants, details of the survey was explained to the study participants, who agreed to participate and information obtained from the study participants on the same day.

The professors, associate professors, assistant professors, post graduate trainees and senior registrars of dental colleges, dentist of Private dental clinics and hospitals were consider in the Inclusion criteria.

House officers and all the dental students were excluded from this survey. Ethical permission was taken from the university ethical committee before the start of the study and participants were informed and explained about the study purpose. Consents was given for the anonymity of the research data. Data was entered and analyzed by Statistical Package for Social Sciences (SPSS) version 20. Results were calculated in frequency and percentage.

**RESULTS**

In this survey, 300 questionnaires were distributed out of which 270 dental professionals participated in which both male and female dentists were included. Response rate of the survey was 90%. There were 162(40%) male and 108(60%) female dentists.

Among 270 practitioners 30.7% have been practicing since more than 10 years and 69.3% have not completed the 10 years of their practice. 67.4% of the dentists use both sitting and standing position while practicing. 17% practice sitting dentistry and 15.6% practice standing dentistry. 75.9% dentist use both direct and indirect

TABLE 1: PREVALENCE OF STUDY PARTICIPANTS BY SOCIO-DEMOGRAPHIC CHARACTERISTICS

Risk Factors	Number (%)
Gender	
Male	162 (40)
Female	108 (60)
Years in Practice	
less than 10 years	187 (69.3)
More than 10 years	83 (30.7)
Working position	
Sitting	46 (17)
Standing	42 (15.6)
both	182 (67.4)
Type of vision	
Direct	49 (18.1)
Indirect	16 (5.9)
both	205 (75.9)
Interval between patients	
Yes	166 (61.5)
No	104 (38.5)
Patient treated per day	
<7	136 (50.5)
>7	134 (49.5)
Working days per week	
5	17 (6.3)
6	168 (62.2)
7	85 (31.5)
Working hours per day	
<6	141 (52.2)
>6	127 (47.8)
Field of Specialization	
Operative	21 (7.8)
Periodontology	9 (3.3)
Prosthodontics	17 (6.3)
Oral surgery	42 (15.6)
Orthodontics	16 (5.9)
General dentistry	147 (56.4)
Others	18 (6.7)

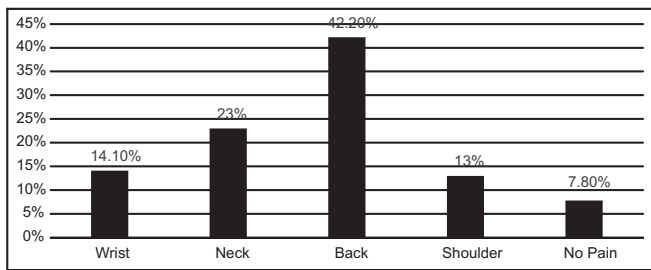


Fig 1: Prevalence of musculoskeletal pain by body Anatomy

vision while treatment procedures. 61.5% dentists take a break between switching the patients. 50.4% dentists treat less than 7 patients per day. (Table 1)

Among the practitioners, 62.2% practice 6 days a week and 31.5% practice 5 days a week. 52.2% practice less than 6 hours per day. 45.2% dentists occasionally experience musculoskeletal pain and 34.1% rarely experience musculoskeletal pain. (Table 1)

In the survey the participants were asked about the field of specialization and 54.4% were found to be the general dental practitioners. 15.6% specifically deals with oral surgery, 7.8% deals with operative dentistry, 5.6% among the practitioners are orthodontists, 6.3% are prosthodontics and 3.3% are dealing specifically with periodontal diseases. (Table 1)

Among the practitioners who participated in the survey 42.2% suffers from the pain in back, 23% experiences pain in neck, 14.1% are the victims of pain in hand and wrist, 13% dentists were found suffering from the pain in shoulders. (Fig 1)

After the survey we figured out that 55.5% male dental practitioner (149) suffers from the musculoskeletal discomforts, 44.5% female dental practitioners (121) suffer from the musculoskeletal pains.

## DISCUSSION

MSD is a known burden among the dental professionals Worldwide. There is a scarcity of data about the MSD among the dentist in Pakistan. Descriptive study with questionnaire was used to determine the burden of MSD. This study explore the Prevalence of MSD among the dentist practices in Karachi, Pakistan. Prevalence of MSD in this study among the dental professional was 92%, this figure is very high and a worry for current and future dentists and was similar to previous study done in Poland where the MSD was reported 93%.<sup>7</sup> there were only 8% participates who filled the questionnaire were without pain. Careful analyses of the results show that 23% and 42.20% of dentists sampled have experienced neck and back pain

respectively. Study reported from Australia showed that dentist suffered more frequently of back pain and has been recorded 64% prevalence.<sup>8</sup> In another study where the results was similar regarding the back pain of our results showed which was done by Thornton et al, found that 44% dentist of united states suffered from back pain.<sup>9</sup> Another study done in Iran, where the 35% of the dentist experienced back problem.<sup>2</sup> There is no unanimously among the researches regarding the distribution of prevalence of MSD sites among dentist.<sup>10</sup> The prevalence of neck pain was 23% in this research and the results are similar with that reported in other countries such as Saudi Arabia<sup>11</sup> and the United States.<sup>12</sup> However the prevalence was lower than that reported by Australia<sup>13</sup>, Poland<sup>14</sup> and Netherland.<sup>15</sup> The third most commonly reported musculoskeletal disorder was wrist ache (14%) and similar to the study done in Netherlands.<sup>15</sup> Contrary to the results of this study another study has found that 54% of dentists suffered from work related wrist ache.<sup>16</sup> Shoulder pain was the less common disorder reported among the dentist surveyed in this research which was 13%, on the other hand the results were dissimilar to study done in Sweden where the prevalence was 85%.<sup>17</sup>

## CONCLUSION

Within the limitations of the present research, the results states that the prevalence of musculoskeletal symptoms among dentists in Karachi is very high (92%). prevalence of back pain was higher (42%) followed by neck, wrist and shoulder. Dentist should be aware of correct posture, avoid working in bent position and should encourage taking regular intervals between the patients.

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| <b>4 Aasim Masood, Muhammad Ali Leghari:</b>          | Drafting of manuscript              |
| <b>5 Muhammad Ali Leghari, M Sohail Memon:</b>        | Critical revision                   |