

Original Research

Prevalence of musculoskeletal disorders among dental practitioners

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ABSTRACT:

Background: Musculoskeletal disorders (MSDs) are a significant occupational health hazard that affect members of various occupations. The present study was conducted to assess musculoskeletal disorders among dental practitioners. **Materials & Methods:** 260 dental practitioners of both genders were enrolled. Frequency of pain, stiffness and intensity of pain was recorded using a questionnaire. **Results:** Out of 260, males were 180 and females were 80. Most of the dentists had always pain observed in elbow in 45%, shoulder in 37%, neck in 72%, back in 67%, knee in 22%, hip in 82% and ankle in 57%. In 56% back pain was severe. Stiffness was present always in 22% around elbow, 37% around shoulder, 44% around neck, 37% back, 48% around hip and 44% around ankle. **Conclusion:** Most of the dental surgeons had musculoskeletal disorder and most of had pain in neck, back, hip and shoulder.

Key words: Musculoskeletal disorders, Pain, stiffness

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INTRODUCTION

Musculoskeletal disorders (MSDs) are a significant occupational health hazard that affect members of various occupations. MSDs are defined as a group of disorders that affect various regions of the musculoskeletal system.¹ These areas include the nerves, tendons, muscles, joints and supporting structures such as intervertebral discs. Patients with MSDs may exhibit any of the following symptoms/complaints: pain, paresthesia, stiffness, swelling, redness and/or weakness.²

The common sites of musculoskeletal complaints among the dental personnel were neck, shoulder, and lower back region with diverse prevalence reported in different studies.³ The working characteristics of dentist include high demands on vision and precision and fine manipulative hand movements and work with unsupported, elevated arms. Although occasional backache or neckache is generally not a cause for concern, the cumulative physiological damage that results from ignoring regular pain and discomfort can lead to an injury or a career-ending disability.⁴

Occupational factors include prolonged static postures, repetitive movements, inadequate lighting, the excessive exertion of the small muscles, and the instrument tight grip, raised arms, static exertion of the muscles on long term, fine-tuned actions and vibration.⁵ Studies show that wide variety of workplace hazards such as infections, eye injuries, vibration, percutaneous exposure incidents, exposure to radiation, dental materials, noise, psychological conditions and musculoskeletal disorders exists in dental practice.⁶ The present study was conducted to assess musculoskeletal disorders among dental practitioners.

MATERIALS & METHODS

The present study comprised of 260 dental practitioners of both genders. All gave their written consent to participate in the study.

Demographic data such as name, age, gender etc. were recorded. A questionnaire was prepared such as field of dental practice, years in profession, average working hours per day, average workdays per week,

average patients treated per day, height and weight. Frequency of pain, stiffness and intensity of pain was also recorded. Results thus obtained were subjected to

statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of subjects

Total- 260		
Gender	Males	Females
Number	180	80

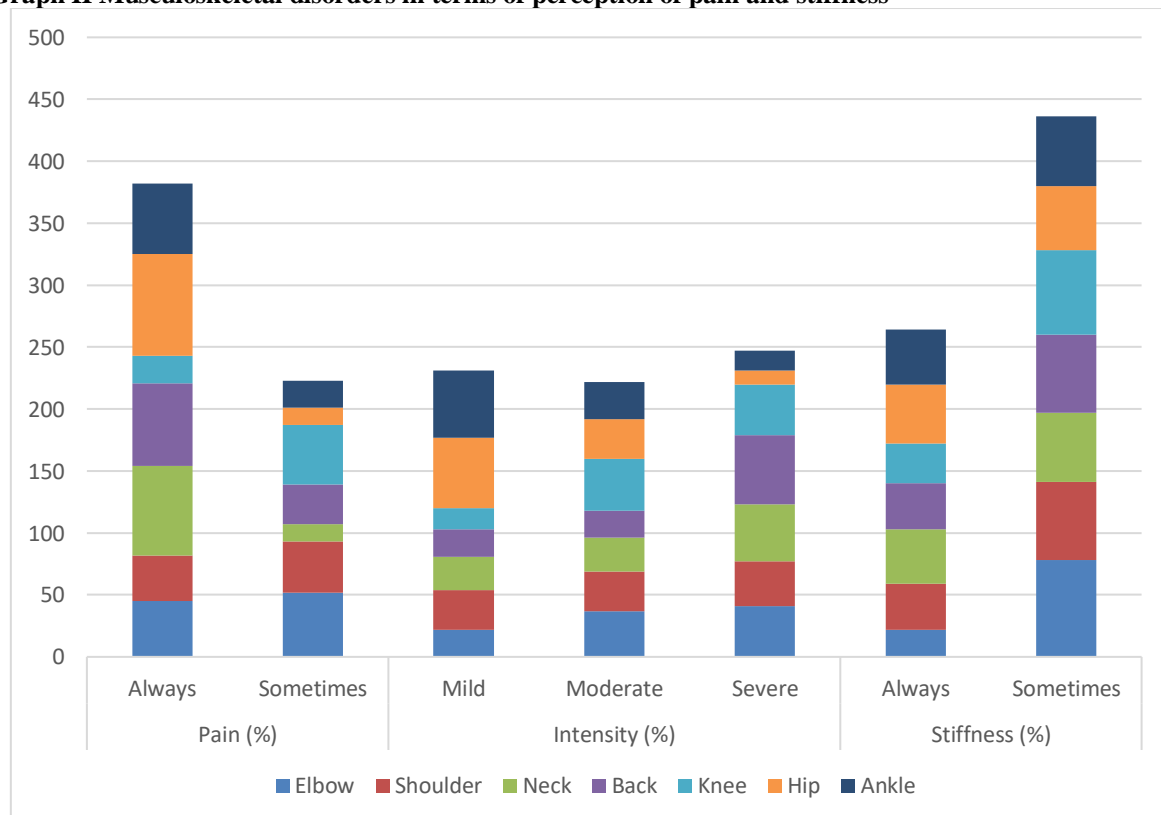
Table I shows that out of 260, males were 180 and females were 80.

Table II Musculoskeletal disorders in terms of perception of pain and stiffness

Location	Pain (%)		Intensity (%)			Stiffness (%)	
	Always	Sometimes	Mild	Moderate	Severe	Always	Sometimes
Elbow	45	52	22	37	41	22	78
Shoulder	37	41	32	32	36	37	63
Neck	72	14	27	27	46	44	56
Back	67	32	22	22	56	37	63
Knee	22	48	17	42	41	32	68
Hip	82	14	57	32	11	48	52
Ankle	57	22	54	30	16	44	56
P value	0.91	0.82	0.04	0.83	0.76	0.15	0.23

Table II, graph II shows that most of the dentists had always pain observed in elbow in 45%, shoulder in 37%, neck in 72%, back in 67%, knee in 22%, hip in 82% and ankle in 57%. In 56% back pain was severe. Stiffness was present always in 22% around elbow, 37% around shoulder, 44% around neck, 37% back, 48% around hip and 44% around ankle.

Graph II Musculoskeletal disorders in terms of perception of pain and stiffness



DISCUSSION

Work-related musculoskeletal disorders (WMSDs) are conditions in which the work environment and performance of work contribute significantly to the

condition; and/or the condition is made worse or persists longer due to work conditions.^{7,8} These areas are especially susceptible to the development of trigger points, which are groups of muscle fibers that

are in a constant state of contraction inside a tight band of muscle.⁹MSDs may be caused by an interplay of specific risk factors acting during work-related activities, such as: repetitive motions, awkward or static postures, forceful movements, and exposure to vibration and/or mechanical stress. Dentists are at risk of developing MSDs.¹⁰ The use of vibratory tools, excessive repetitive movements, maintaining a static position while performing extremely precise procedures in a small workspace, and/or maintaining an inadequate posture for long periods of time are some of the postulated reasons for the possible risk of developing MSD.^{11,12}The present study was conducted to assess musculoskeletal disorders among dental practitioners.

We found that out of 260, males were 180 and females were 80. Gangaraju et al¹³ determined the prevalence and distribution of MSDs among dental practitioners. Neck pain (57.5%) is the most prevalent MSD followed by lower back pain, and wrists and upper back trouble. Elbow pain, lower back, knee, and foot/ankle trouble were more common among males than females and this difference was found to be statistically significant. Neck-related MSDs have shown more amount of reduction in working hours (17.0%) and leisure activity (9.4%) and more doctor consultations (11.3%). High prevalence of MSDs exists among the dental practitioners. There is a need for the integration of ergonomic awareness and health promotion with the professional practice for dentists.

We found that most of the dentists had always pain observed in elbow in 45%, shoulder in 37%, neck in 72%, back in 67%, knee in 22%, hip in 82% and ankle in 57%. In 56% back pain was severe. Stiffness was present always in 22% around elbow, 37% around shoulder, 44% around neck, 37% back, 48% around hip and 44% around ankle. Aljnakh et al¹⁴ in their cross-sectional, questionnaire study among 80 licensed dentists used a self-administered questionnaire, based on the Nordic Musculoskeletal Questionnaire (NMQ) was sent to participants after translation to Arabic. The questionnaire was delivered by mail with a prepaid return envelope. Sixty-eight questionnaires (85%) were returned. The prevalence of MSDs among respondents was 77.9% (n=53) with the most commonly affected areas the lower back (73.5%) (39/53) followed by the neck (66%) (35/53) and the shoulders (43.3%) (23/53). Twenty-four (45.2%) of 53 respondents had experienced MSDs in the neck and lower back at the same time throughout the past twelve months. Nearly 85% (45/53) of respondents were found to have MSDs affecting two or more sites.

Muralidharan et al¹⁵ determined the prevalence and distribution of MSD among dental practitioners. Seventy-three dental practitioners participated in the study of which seventy-eight percent had a prevalence of at least one MSD symptom over the past twelve months. Most common areas affected by MSD in order of magnitude were neck (52%), low back

(41%), shoulders (29%) and wrist (26%). One third of the practitioners (40%) required sick leave from their practice during the preceding twelve months.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that most of the dental practitioners had musculoskeletal disorder and most of had pain in neck, back, hip and shoulder.

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