Research Paper

Volume : 3 | Issue : 3 | March 2014 • ISSN No 2277 - 8179

Prevalence of Musculoskeletal Disorders Among Dental Surgeons in Different Specialities

Medical Science

KEYWORDS : Dentistry, ergonomics, musculoskeletal disorders.

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ABSTRACT

A study was conducted at A.B.Shetty memorial Institute of Dental Sciences among dentists from different specialities to know about their work related problems through a questionnaire. The results showed that 37% suffered from neck pain, 52 % shoulder pain, 29 % and 38% had pain in the upper back and lower back respectively, 21 % had pain in the hand and 37 % had pain in the wrist. 72% dentists practiced in sitting position, 9% in standing position and 19 % in both positions, 19% used magnification. Four hand dentistry was practised by 27 % and two hand dentistry by 73 %. 51% followed an exercise regimen and 78% took breaks in between. 57% dentists felt stressed with their daily work routine and only 60 % took steps to reduce the same. The study showed that there was a significant association between work habits and lifestyle and musculoskeletal disorders.

INTRODUCTION

Ergonomics is an applied science concerned with designing products and procedures for maximum efficiency and safety[1]. It can also be described as a study of the relationship among the personnel, equipment and environment in the work area.[2] Work environment and job demands that are not ergonomically sound can lead to musculoskeletal disorders (MSD). Work-related musculoskeletal disorders encountered among dental surgeons affect the soft tissues of the upper extremities, nerves, tendons, and muscles. Tendonitis, carpal tunnel syndrome (CTS), De Quervain's disease, ulnar and radial nerve entrapment syndromes, and various shoulder, neck, and upper back injuries are included in these musculoskeletal disorders. Pain, swelling, burning sensation, cramping, blanching, decreased range of motion, stiffness, muscle weakness, and sensory nerve disturbances like tingling and numbness are some of the symptoms seen.[3] The aim of the study was to obtain information which may help in knowing the risk factors thereby preventing early manifestation of MSD.

MATERIALS AND METHODS

A survey was conducted among dentists in A.B.Shetty memorial institute of dental sciences and a questionnaire was given to 200 dentists belonging to different specialities to enquire about their ergonomics and different pain related problems. Other than demographic details, the dentists were asked about pain in the neck, shoulder, back, wrist and hand, its frequency and severity, steps taken to reduce the same, use of microscopes and other questions pertaining to ergonomics and the kind of dental practice. Confidentiality and anonymity about the data was assured.

RESULTS

Out of the 200 people, 78 were female and 122 were males in the study. Different speciality Dentists who took the questionnaire (Endodonists-19%, Oral medicine, Oral pathologists 10%, Oral surgeons 6%, Orthodontists 13%, Peadodontists 10%, Periodontists 16%, and Prosthodontists 12%).The number of practising years ranged from 1- 48 years. The study showed that 72% dentists practiced dentistry in sitting position, 9% in standing position and 19 % in both standing and sitting position. When dentists were asked about magnification and dental practice, only 19% used magnification. It was seen in the study that four hand dentistry was practised by 27 % and two hand dentistry by 73 %. 80% of the dentists used appropriate positions while practicing dentistry. When enquired about following a exercise regimen and taking breaks in between treating patients, 51% and 78 % gave positive answers respectively. 57% dentists said they felt stressed with their daily work routine and only 60 % took steps to reduce the same (18% deep breathing, 9.5% meditating, 26% listening to music, 6.5% others).The questionnaire also enquired about the frequency and severity of pain in the neck, shoulder, upper back , lower back ,hand and wrist. Out of the 200 dentists, 37% suffered from neck pain, 52 % shoulder pain , 29 % had pain in the upper back 38 % had pain in the lower back, 21 % had pain in the hand and 37 % had pain in the wrist. 63 % of dentists took measures to reduce the pain (17% used drug treatment, 34% exercise, and 12% used physiotherapy)

TABLE 1: Showing the severity of pain in different parts of the body.

SITE ON THE BODY	MILD PAIN	MODERATE PAIN	SEVERE PAIN
Neck	60%	12%	2%
Shoulder			
Upper back	39%	15%	5%
Lower back	18.5%	17%	1.5%
Hand	18%	3%	0%

Wrist	26%	11%	0%

SITE	Always	During work	Sometimes
Neck	4%	10.5%	22.5%
Shoulder			
Upper back	7.5%	5%	15%
Lower back	6%	8%	23%
Hand	1%	2%	6.5%
Wrist	0%	10%	8.5%

TABLE 2: Showing the frequency of pain in different parts of the body.

DISCUSSION

GENDER

According to Yamalik et al, gender is strongly associated with chronic complaints and seeking medical help. Women experience poorer general health and seek medical care.[4] In the present study it was found that male suffered more from MSD as compared to females it could be due to females pay more attention to their health and well-being [5].

NUMBER OF PRACTICING YEARS

The percentage of dentists in the higher age group showed less MSD as compared to those in the lower age group , this could be due to the fact that older patients take up less patients due to increasing age or with the increase in the number of years of practice have developed better coping measures.[6] Another reason could be that young dentists work more in the early years of practice leading to MSD's and this muscle stiffness and pain encourages them to keep fit and hence they experience less pain in the later years.[7]

MAGNIFICATION

In the present study percentage of dentists using magnification was very low .However it is seen that proper selection, adjustment and use of magnification systems has led to decreased neck and low back pain allowing the operators to maintain healthier postures.[8]

POSTURE

Dentists who practiced in the standing position experienced pain earlier.[7]Sitting for long hours gives rise to lower back problems. Different muscle groups are used in standing and sitting posture. Hence alternating between the two muscle groups helps in shifting the workload from one group to another and acts as an effective tool in preventing injuries. [9]

PERIODIC BREAKS AND STRESS

Long working hours without breaks can increase the operators pain .[10] Scheduling micro breaks regularly shows less discomfort among operators as it replenishes and nourishes the stressed structures. [11,12]Muscle contraction and pain is seen to be elevated especially in the trapezius muscle due to stress. Hence appropriate stress reduction techniques needs to be followed.[13]

PAIN IN DIFFERENT AREAS OF THE BODY

Pain in the neck and back region can lead to myofacial pain syndrome.'' Trigger points" in the muscles and restricted motion are some of the symptoms seen .Thermal, mechanical and chemical treatments to reduce pain and restore muscle function; muscle strengthening and stretching can be done to reduce pain. Shoulder region pain can lead to rotator cuff problems, thoracic outlet syndrome and tendonitis. Worksite ergonomic interventions; Non Steroidal Anti Inflammatory Drugs; steroid injections; minimizing the aggravating movements, physical therapy, massage are some of the treatment options.

Disorders seen in the hand are Carpal tunnel Syndrome, Cubital tunnel syndrome, De Quervain's disease, Tenosynovitis .Treatment options include night splint; increased frequency of rest/breaks; change in work patterns; use of large-handled instruments; anti-inflammatory drugs, diuretics; steroid treatment; ergonomic intervention; physical therapy. .The treatment is decided according to the severity of the condition.

Surgical intervention is used as a last resort.[14, 15, and 16]

CONCLUSION

Limited ergonomics in work environment and inappropriate lifestyle habits could lead to musculoskeletal disorders. The prevalence of musculoskeletal disorders is high .Appropriate measures to reduce the prevalence of musculoskeletal disorders should be taken into consideration by educating the dentists about the right ergonomic positions, awareness about work related risk factors and taking measures to lead a healthy lifestyle.

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