

Knowledge and Attitude of Undergraduate Dental Students Regarding Posturedentotics: A Cross Sectional Study

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ABSTRACT

Aims: The aim of present study is to assess knowledge, attitude and practice of ergonomics during routine dental procedures among undergraduate students in Telangana.

Methodology: The Present survey carried out among 500 final year dental undergraduate's students. An online questionnaire was distributed among students that comprised 12 questions regarding the knowledge attitude of the dental students about ergonomics and its importance in preventing work-related musculoskeletal disorders.

Results: The obtained results were analyzed and interpreted in percentages. 91.2% of the study population was aware of the occupational hazards in dentistry. 69% of the students were aware about ergonomics

Conclusion: The thorough understanding of the ergonomics is essential to know about the musculoskeletal problems that could arise because of improper ergonomics in dentistry. Ergonomics training, HANDS on workshop should be included as a part of the curriculum targeting young budding dentist for longer and healthy carrier

Keywords: Dentistry, Ergonomics, musculoskeletal disorders, undergraduate students.

INTRODUCTION

Dentistry is a challenging profession involving a high degree of concentration and precision. Dentists require good visual

acuity, hearing, depth perception, psychomotor skills, manual dexterity, and the ability to maintain occupational postures over long periods. Diminution of any of these abilities affects the practitioner's performance and efficiency.[1] Ergonomics, therefore, is an applied science concerned with designing products and procedures for maximum efficiency and safety. Good working ergonomics is essential so that work capability and efficiency can be maintained throughout the working life of dental professionals thereby providing quality treatment to the patients.[1] The Ergonomic Standard mandated by the Occupational Safety and Health Administration (OSHA) recommended that the most efficient and effective way to remedy "ergonomic hazards" causing musculoskeletal strain should be through engineering improvements in the workstation. According to WHO musculoskeletal disorder is defined as a disorder of the muscles, tendons, peripheral nerves or vascular system not directly resulting from an acute and instantaneous event. Therefore, it is also known as a work-related musculoskeletal disorder.[2] Dentist and dental hygienists are at a greater risk of work-related musculoskeletal disorders than the general population. These disorders can result in pain and dysfunction of the neck, back, hands and fingers. The most affected

regions in dentists have been shown to be the back and neck. It has been estimated that work related musculoskeletal injuries occur in 54% to 93% of dental professionals, with the most frequent injuries occurring in the spine, shoulders, elbows and hands.[3,4]

The identification and modification of risk factors such as stature, physical condition, strength, work organisation, ergonomic hazards, awkward postures, prolonged repetitive movements, intense work schedules, or fast work pace are becoming important in the prevention of these disorders. So, the aim of present study is to assess knowledge, attitude and practice of ergonomics during routine dental procedures among undergraduate students in Telangana.

MATERIALS & METHODS

The present cross-sectional study was a questionnaire survey carried out among 500 final year dental undergraduate's students in Telangana state. The study plan was approved by the institutional ethical committee. Dental Students from various colleges in Telangana state were considered for the study. The sample size was estimated using the convenience sampling technique. With the help of existing literature, a self-designed, structured questionnaire form was developed. A pilot study was done on 50 subjects to check the validity and comprehension of each questionnaire of the study. The mode of data collection was an

online questionnaire using Google forms. An online questionnaire was distributed among students using a combination of convenience and snowball sampling. The questionnaire comprised 12 questions regarding the knowledge attitude of the dental students about ergonomics and its importance in preventing work-related musculoskeletal disorders. The questionnaire consists of 3 sections comprising demographic details, five questions regarding knowledge about ergonomics, four questions about the importance of awareness about ergonomic principles, three questions on practice in preventing musculoskeletal disorders. Incompletely filled questionnaires were excluded from the study. The collected data were tabulated and statistically analyzed.

RESULT

The obtained results were analyzed and interpreted in percentages. A 500 under graduate final year students participated in the study among them 396 (79.2%) were females, 104 were males.

Knowledge and awareness about ergonomic principles:

66.9% of the study population reported with some discomfort while working on the patient such as neck and upper back pain (19.2%), lower back pain (18.8%), hands and fingers (14.8%), all types of pain in 47.2%(Figure 1,2).

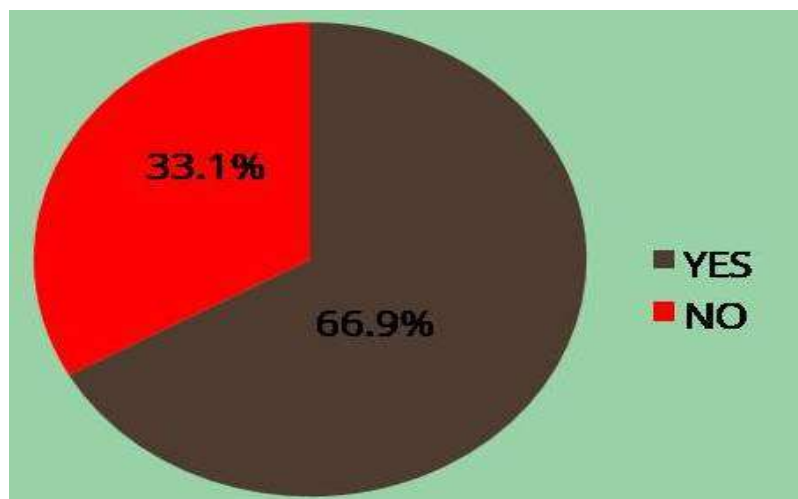


Figure 1: some discomfort while working on the patient

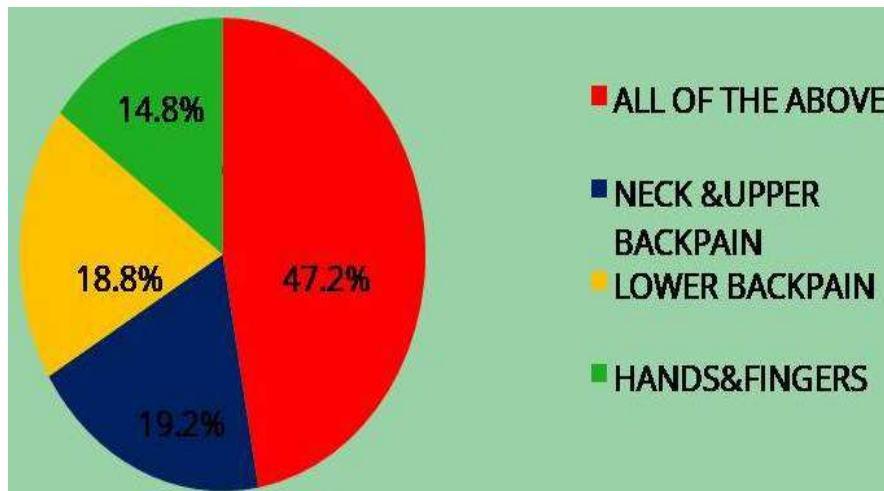


Fig2: TYPE OF DISCOMFORT FEALT

91.2% of the study population was aware of the occupational hazards in dentistry. 69% of the students were aware about ergonomics (figure 3).

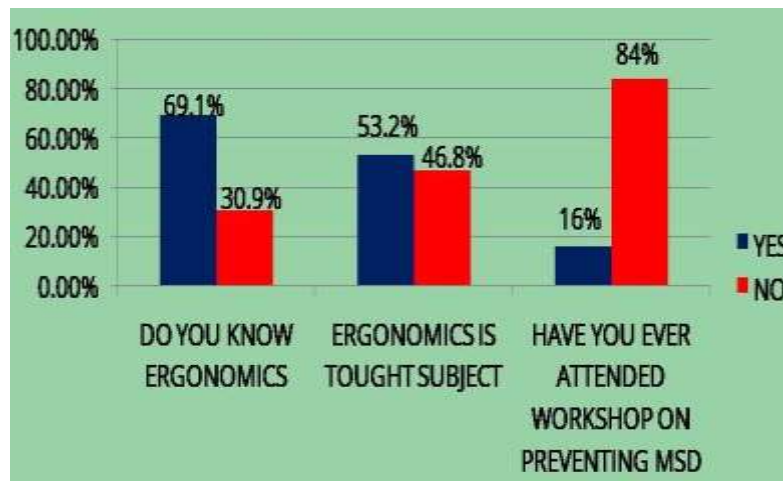


Fig3: knowledge about ergonomics

Practice in preventing musculoskeletal disorders: Regarding the prevention aspect of musculoskeletal disorders 59.7% were not familiar with the preventive measures to be taken, 62.2% were not familiar about the treatment aspect of MSD (figure 4).

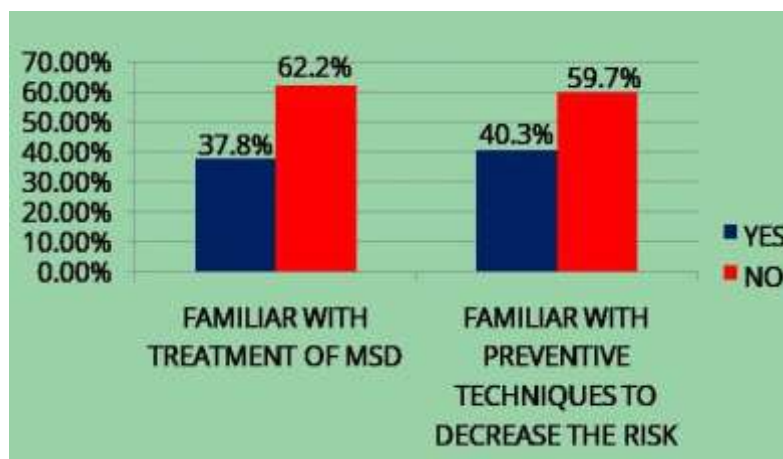


Figure 4: Practice in preventing musculoskeletal disorders

DISCUSSION

Dentists are among those who are at risk of developing work-related musculoskeletal disorders (WMSDs). Musculoskeletal pain is caused by the nature of dentist-working characteristics such as repetition of working patterns, absorption of force and vibration during operation, extrinsic stress, and abnormal working posture. MSD affects the physical, psychological, and social aspects of practitioners. This in turn impacts on their productivity and ultimately reducing the quality-of-life of the practitioners. Evaluating the comfort, practicality, and usability of the dental operator stool is critical to promoting dental practice while also preventing the onset and progression of musculoskeletal disease among dental professionals. Musculoskeletal pain affects three out of every five dentists.[5]

Ergonomic conditions are simply the safest, most efficient, and easiest way to work. The scope of ergonomics in dentistry is large; it ranges from chemistry between the dental team to lighting, noise and odor conditions and the used equipment and software. The treatment environment which comprises of the patient chair, dental unit, operating light, dynamic and hand instrumentation, cabinetry and peripheral equipment must be flexible.

A study by Harbin AJ et al concluded only 35% of dental students who were well-versed in ergonomics theoretically organized their posture. In the present study 69% of the study population aware of the ergonomics and 66% reported with some discomfort. [6] In the present study, the commonly affected areas were neck and upper back pain (19.2%), lower back pain (18.8%), hands and fingers (14.8%), all types of pain in 47.2%.our study is in accordance with Gupta D et al, reported pain at neck (52.1%), low back (41.1%), and shoulders (28.8%) respectively.[5]

In the present study to the investigation of the correlation between theoretical knowledge and practical application, the correlation between the theoretical knowledge and self assessment of students

was also estimated. 69% of the students were aware about ergonomics theoretical knowledge but 66.9% of the study population reported they had discomfort. Therefore, the students, besides not properly applying their theoretical knowledge in practice, also cannot understand where their postural errors lie.

In the present study 60 %of the student doesn't know about preventive and treatment part of the MSD. The adoption of an ergonomic work posture during professional training should be encouraged. [7] To curb the work-related musculoskeletal disorders, certain measures can be taken. Yoga, meditation, and other exercises should be regularly performed to reduce stress levels and release the muscular tension. Chairside stretching should be performed at regular intervals to prevent microtrauma and muscle imbalances. The use of dental loupes and microscope facilitates a more upright posture and diminishes or eliminates chronic back and neck pain.[8,9]

CONCLUSION

The number of sedentary jobs has increased since the industrial revolution, as has the number of musculoskeletal disorders (MSD). In 20 decades, the prevalence of low-back pain has increased tenfold, and nearly one-third of dentists are forced to retire early due to a disability. The thorough understanding of the ergonomics is essential to know about the musculoskeletal problems that could arise because of improper ergonomics in dentistry. Ergonomics training, HANDS on workshop should be included as a part of the curriculum targeting young budding dentist for longer and healthy carrier

Declaration by Authors

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