



Assessment Of Knowledge, Awareness And Practice Related To Ergonomics Among The Dental Care Professionals Of Gujarat : A Questionnaire Based Survey.

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Abstract

Aim : Nature of the dental profession and postures took over by dental surgeons during their professional work has an enormous issue on their body. Dentists currently are getting more prone to musculoskeletal diseases. A well-conditioned - adapted master plan of the workplace is a fundamental demand for maintaining musculoskeletal wellness that will in turn upgrade work effectiveness. So, the present study was undertaken to assess knowledge, awareness and practice about ergonomics among oral health professional in Gujarat, India.

Materials and Methods: Five hundred dental professionals were interviewed through a questionnaire. Those interviewed included an equal number of dental interns, postgraduates, and practitioners.

Results and Discussion: A positive attitude towards ergonomics was observed among those questioned. The difference was statistically significant among the groups. However, inputs from this survey can be used to organize awareness and knowledge regarding ergonomics of joint ventures.

Conclusion: These surveys conclude that current knowledge on ergonomics among dentists is still reduced. So, the overall perception of the general dentists toward ergonomics in Gujarat needs to be gauged so that the general dentists can call for introspection and betterment of their health.

Keywords: Dentists, Gujarat, Survey, Questionnaires

Introduction

Ergonomics is the scientific study of people and their working environment. Ergonomics was derived from a Greek word “Ergo” means work and “Nomos” means natural laws or systems. Ergonomics consequently is the science concerned with designing products and procedures for maximum efficiency and safety (American Dental Association 2011)^[1]. Ergonomics in dentistry is defined as reduction in cognitive and physical stress, preventing occupational diseases, thereby improving efficiency, with better quality and greater comfort for both the practitioners and patients^[1-2].

Every occupation has its associated pitfalls and occupational hazards, which eventually bring ergonomics into the picture. Ergonomics deals with the revision of work as per the demand of people, rather than accommodating with the existing conditions.

Musculoskeletal disorder is the term that refers to the conditions that involve the nerves, tendons, muscles, and supporting structures of the body. When a specific job plays the main causative factor, then the term becomes work-related musculoskeletal disorders (WMSDs)^[2-3].

The dental insistence requires artful dental cures with great perfection and control. Muscles utilized for this goal are at threat of getting fatigued and causing discomfort to the dentist^[4]. A dentist is known to be the most exposed to postural matters due to narrow access and definite view which makes them sensitive to occupational pitfalls. The correct ergonomic strategy should be given farthestmost significance to help tedious strain hurts which ultimately can lead to long - term disability^[5]. Ergonomic principles head to show a fairly safe and healthy working surroundings for practitioners which will ultimately lead to accelerated productivity.

Thus, the study aimed to assess the dental care professionals knowledge, awareness and practice toward ergonomics in the Gujarat state.

Materials And Method :

Five hundred dental professionals were interviewed through a questionnaire. Those interviewed included an equal number of dental interns, postgraduates, and practitioners. They were interviewed on a google form. Knowledge was assessed on a two point scale : Yes, No. The proforma comprised of two sections. The first section collected to demographic details of the participants like name, E-mail id, gender and category and the second part comprised 15 questions which are as follows :

1. Do you know the term Ergonomics?
2. Do you co-relate Ergonomics with dentistry?
3. Do you apply Ergonomics in routine dental practice?
4. Do you know about four-handed dentistry?
5. Are you aware of different chair positions?
6. Do you follow correct operating position while working on patients?
7. Do you work on proper dental light?
8. Is direct vision more comfortable for you than indirect vision?
9. Do you often experience back, neck and shoulder pain after treatment?
10. Do you perform shoulder or neck exercise?
11. Do you feel numbness of fingers while working?
12. Do you rest your feet on the ground while working?
13. Do you take short intervals between working hours?
14. Are you aware of stretching exercise which can be done in working hours?
15. Do you think information and training about Ergonomics will be useful?

The responses were compiled, computed and analyzed for agreement or otherwise between and within the groups. Chi-square test with its corrections was used to confirm the difference in proportions. Probability of 95% was considered as statistically significant.

Results :

Of 500 dentists included, 29% were males while 71% were females. About 84% dental professionals knew the term ergonomics and they co-relate ergonomics with dentistry. 74% professionals apply ergonomics in routine dental practice and almost 92% knew the term four-handed dentistry.

In routine dental practice about 92% professionals were aware of different chair positions and followed correct operating position while working on patients. 94% dentists used proper dental light while working and 84% were more comfortable with direct vision in comparison with indirect vision. 78% dental professionals experienced back, neck and shoulder pain after treatment but only 46% of the dentists were performing shoulder or neck exercise. About 44% dentists felt numbness of fingers while working. Almost all dentists which is about 90% rest their feet on the ground while working. 70% of the dental professionals took short intervals between working hours. Only 46% of dentists were aware of stretching exercise which can be done in working hours. All the dental professionals thought that information and training about ergonomics will be useful.

Based upon the results of this survey, we have identified certain factors which could be changed for the betterment of the society. Knowledge and training about ergonomics should be given to the dental professionals for their better health.

Discussion :

This study highlights and supports the showed reality that Work- related musculoskeletal disorders (WMSD) is a considerable concern for dental students during their training times. WMSD are one of the main occupational health pitfalls affecting dental practitioners and dental students^[6] conforming ergonomic principles in diurnal practice reduces circumstances of overdue strains and musculoskeletal pain and similarly improves work effectiveness to give high- quality treatment to the patients^[7-8]. Despite the various advantages ergonomics is quiet an disregarded matter from both practice and knowledge point of view, and also, it wasn't a allowance of the class offered by Pakistan Medical and Dental Council for universities and colleges; it existed solely in 2011 that hitches "occupational diseases and ergonomics " were framed portion of the course outline^[9]. The accomplishment of ergonomics science is circulated applying irregular measure only and this necessitates evaluation of awareness, attitude, and practices towards ergonomic principles during normal dental procedures among dental students and dental practitioners^[10].

Shrivardhan et al.^[10] in his study reported higher knowledge score of 52%. Another study conducted by **Garbin et al.**^[11] also reported that 38 (55.1%) of the dental students had satisfactory knowledge of ergonomics. **Barlean et al.**^[12] reported similar results about knowledge scores to be 52.6%. The study conducted by **Madaan and Chaudhari**^[13] regarding overall awareness of ergonomics in dentistry among third and fourth year students and house surgeons, reported much lower scores 49 (19%) which is similar to this study result. **Munaga et al.**^[14] in his study reported that 73% of the students usually work with their legs separated with feet flat on floor. **Caballero et al.**^[15] reported that 1250 (89%) of the practicing dentists showed a forward bending of the head exceeding the healthy postural limit.

Result of the study are in accordance with the studies done by **Muralidharan D et al., (2013)**, **Al Ali K and Hashim R (2012)**, **Ali Z et al., (2019)**, **Sultana N et al., (2019)** where high prevalence of MSD (78%, 68%, 88.8%, 64%, respectively) was found among dental professionals^[16-19]. It is also in accordance with the study done by **Desai V et al., (2012)** who stated that awkward and repeated posture

for significant duration of time is an important forecaster of MSD^[20].

Limitations :

A critical limitation of this research is that this study is questionnaire predicated and knowledge and practice of ergonomics may not be neat charged by this method. The answers may exist subject to sociable advisability bias, compliance bias, obsequiousness, and hello- goodbye effect²¹. There's similarly a contrast between genuine and perceived knowledge and practice. thus, the results might not exist the authentic remark of clinical practice. also, the reasons behind the use of inadequately designed dental equipment and in general dental practices need to be probed.

Future Directions :

The matter of ergonomics lays down the establishment of dental practice. Correct ergonomics should be inculcated in every angle of dental practice, carrying instrument designing, planning of workstations, and should be enforced while doing clinical work. The use of ergonomic principles that identify, pointout, and qualify postural inadequacies is obligatory. The education of this area is ineluctable as blooming dentists in present's world are getting more prone to evolve occupational troubles. Audiovisual resources should be integrated in dental institutes so that the students as well as practitioners can tempt to identify the miscalculations and come up with results. Dentists' knowledge and attitudes toward ergonomics should again and again modernized by conducting the educative agendas to accelerate awareness, downgrade the incidence of occupational pathologies conducting to early withdrawal among dentists, and improve the quality of the dental health - care services rendered to the patient.

Conclusion :

The current study reveals the status of ergonomics and employ by dental professionals during routine dental procedures. There's demand for addition of ergonomics as further arranged motives in dental curriculum and also placing further strain on not just academic knowledge but along with the practical implication applied during varied dental procedures. The outcomes from the current study shows that oral health professional need to emphasize on practicing

ergonomics in their everyday dental practice to avoid major ergonomics related health problems. Further studies are required to conduct knowledge and create awareness about ergonomics so that dentists can lead a healthy professional life.

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