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PREVALENCE OF LOW BACK AND NECK PAIN AMONG THE DENTISTS (KHOST, AFGHANISTAN

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ABSTRACT

This study aims to understand the prevalence of low back and neck pain in dental practitioners and to identify that how dentists can access ergonomic consultations in Khost Afghanistan. Qualitative research method is used in this study. Both primary and secondary data is collected. Primary data is collected through questionnaires shared in the shape of Google Forms and for the literature review the secondary data is collected from books, academic journals and reports. Convenience sampling technique is used for selecting the dentists working in Khost province. The collected data shows that 41.2% had both pains at the same time while 39.7% of the population had only back pain. This pain had many risk factors such as professional, environmental and ergonomic factors. This study also shows that a lot of dentists work more and work without any ergonomic consultation due to unusual posture and insufficient breaks between each patient lack of relaxation during breaks and lack of exercise in daily activity. Also, we can see no exciting ergonomic rules and no implementation of occupational health programs that cause pain.

Keywords: *Dentists, Prevalence, Low Back Pain, Neck Pain, Khost Province*

INTRODUCTION

This study aims to understand the prevalence of low back and neck pain in dental practitioners and to identify that how dentists can access ergonomic consultations in Khost Afghanistan.

The work environment is one of the most important factors in workers' lives for this reason policies or rules of occupational health are more needed due to mostly physical workers doing hard work. Literature shows that 150 million population are not aware of occupational hazards.

Dental personnel face many hazards and problems such as herpetic whitlow, contact dermatitis due to materials, the noise of headpieces related instruments, and Locomotors system disorder the last one is frequently seen in dentistry when there are most affected musculoskeletal organs like the lower back and neck pain.

The dentists are at high risk of upper extremities especially lower back and neck ache problems due to the limited work area with a limited scope of movement and narrow visual field associated with the oral cavity as endodontic procedures take much time, especially for posterior teeth There is a high probability of anomalies in posterior teeth canals and also we can see in prosthodontics the teeth crown cutting for dental prostheses or crown is take much time for fixing Although there are numerous causes. With the limited working space in dental clinics and the restricted field of vision into the patient's oral cavity to achieve accurate diagnosis and treatment while maintaining sufficient visibility dentists frequently change their

posture and position. Additionally, dentists often perform lengthy procedures, spending at least 30 minutes with each patient, this long time can cause multi position posture during this time which significantly affects their back and neck over time. Also, dentists try for more productivity so there in Afghanistan in every medical clinic majority of health personnel work for 10 to 12 hours per 24 hours due to not existence health worker policy for clinics.

Moreover, many dentists lack access to necessary professional health advice, and workplace health standards are often not implemented or followed. Worldwide dentists suffering from musculoskeletal pain. In a study conducted in 2022 Riyadh (Fatima alqatabi, 2022), Saudi Arabia revealed that between 63% and 93% of dentists experienced back and neck ache. Similarly, a study in 2015 in Patina India (Chandra, 2015) that 72.80% of the dentists had suffered from the problem and there are 38.01% of dentists had low back pain. Another study reported in 2009 in Istanbul turkey (Duygu Geler Külcü, 2009) that approximately 37% to 53% of dentists complained of back pain. Besides, studies show in Saudi Arabia (Alghadir, 2014) that 124 (85%) reported that they had developed some sort of musculoskeletal pain after joining the field of dentistry. In a study conducted in 2024 in Jakarta Indonesia (analdi, 2024) that 94.3% of the population was diagnosed with low back pain. In another study in 2017 in Lebanon (jaoude, 2017) 61.5% of participants complained of spinal pain. A study in 2018 in Karachi (Ali, 2018) showed that 34.41% of dentists had back pain and 22.32% had neck pain. In 2006 in Queensland Australia (Leggat, 2006) 57.5% population had neck pain and 53.7% had low back pain. Also in study show in 2017 in India (Prasad, 2017) conducted that 54% of dental practitioners experienced low back pain. A study conducted in 2018 in Kerman Iran (Raha Habib Aghahi, 2018), found that 91% of dental students and practitioners were unaware of professional health rules.

Despite the availability of modern and advanced technology that could potentially shorten lengthy dental procedures, the lack of familiarity with such technology has contributed to the continued prevalence of back and neck pain in dental professionals.

AIM AND OBJECTIVES:

This study explores the prevalence of low back and neck pain in dental practitioners and to identify that how dentists can access ergonomic consultations.

RESEARCH METHODOLOGY:

This study is qualitative in nature. Both primary and secondary data are used. Primary data is collected through questionnaires shared in the shape of Google Forms to the dentists working in Khost province. In this part we emphasized those dentists who have; at least two years of experience. Nevertheless, for theoretical underpinning and literature review, we used secondary data; books, articles, newspapers, and case studies.

Data collection tools:

A questionnaire was designed to collect the primary data. The questionnaire consisted of three main parts. The first part of the questionnaire focused on the demographic characteristics of the population. In this part the age, weight, and experience are understood. The second part of the questionnaire was designed for the evaluation of the main questions of the research. In the final section of the questionnaire, the population was asked whether they had provided themselves with the ergonomic rules or not. This questionnaire was self-prepared by consulting the dental practitioners and specialists and all questions were relevant to this study.

Sampling technique:

In this research study, a convenience sampling technique is be used while selecting the main population of the study. The convenience sampling method is a type of nonrandom sampling technique. Members of the target population are selected when meet certain criteria such as willingness, easy accessibility, and availability at a given time. Among the study population, we just selected 68 dentists who work in Khost province.

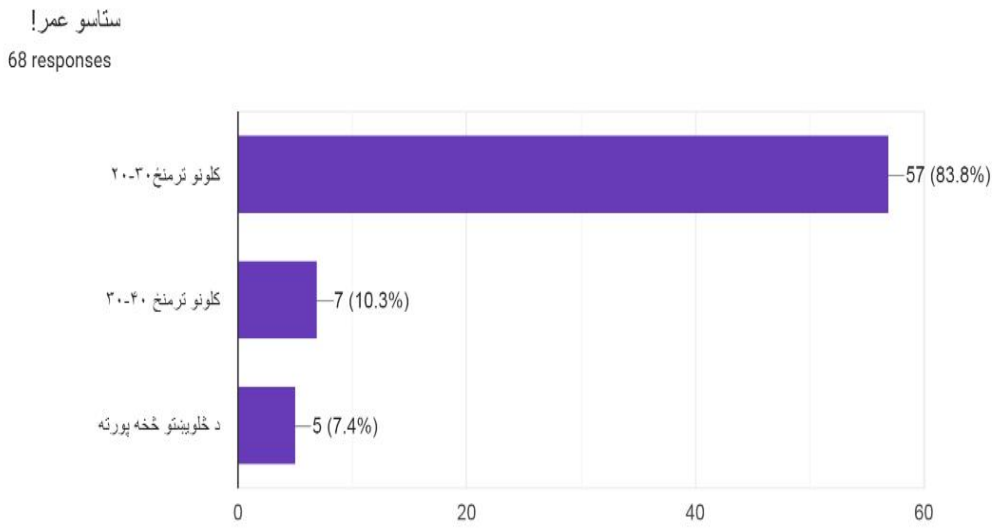
Significance of the study

Firstly the study boosted the existing data about the research main question among dental personnel because no one has researched the same topic. Along with this, it explains the prevalence and attention of dental practitioners to manage their work environment because the majority of these dentists have no awareness of this problem and they take it normally and do not care for themselves so they work continuously and hard which harms them. Furthermore, to contribute to health and occupational workers to identify or explain ergonomic rules during duty because they are not aware of ergonomic rules and make seminars and workshops or design charts in clinics for dental practitioners and train them. Additionally, it will suggest the academia in this field add occupational health-related subjects, particularly to the dentistry curriculum during university courses. Finally, it will increase the awareness of students who want to study dentistry and work after graduation who have a disability in the upper limb, back, and cervical spines to attend to this problem.

Demographic information of the study population

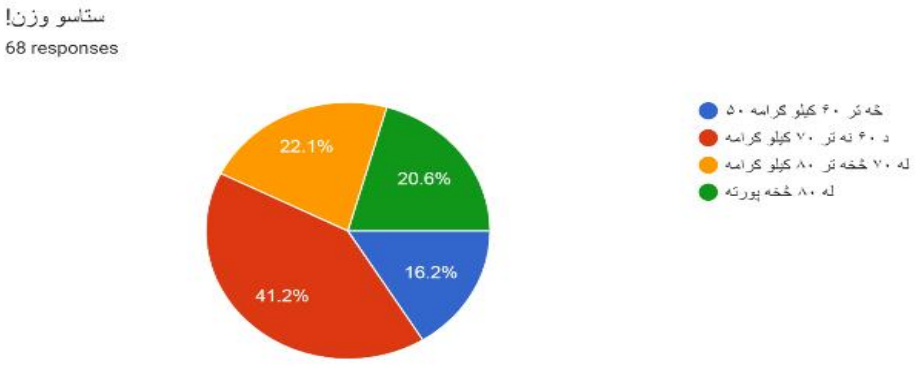
In this part of the research, we examine the demographic information of our research populations, including their age, weight, and work experience. In the part of age among the 68 dentists 57 equal to 68.8% were between 20-30 years old, 7 dentists equal to 10.3 % were between 30-40 years old, and 5 dentists equal to 7.4% were above 40 years old. (figure-1)

FIGURE-1 show the age of the participants



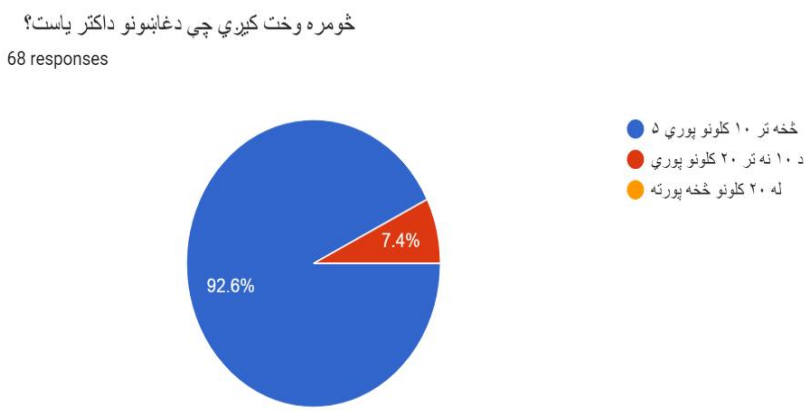
In the part of weight, 41% were 60-70 kg, 22% were 70-80 kg, 20.2% were over 80 kg and 16.2 were 50-60 kg (figure-2)

FIGURE-2 show weights of participants



In the section on work experience, 92.6% population had 5-10 years of experience and 7.4 % had 10-20 years of experience. In this section, the study focuses on participants who worked a minimum of two years or more because the research's main question is the prevalence of back and neck pains, and both pains can be symptomatic for years also new and inexpert doctors don't have patients and can't contribute to the research objectives and to give us satisfactory information. (Figure-3)

FIGURE-3 show the experiences of participants



Result of demographic information

Based on the above information and collected data most of the population were between 20 to 30 years old, most of them had 60-70kg weight and finally most of them had 5-10 work experience.

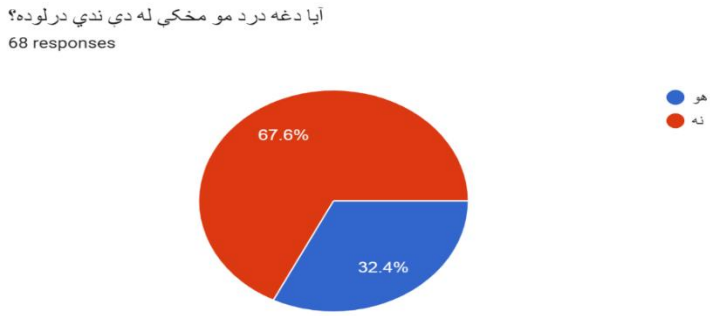
Bake pain and neck pain frequency in dentists (figure-4)

In the questionnaire, we asked the respondent if they had neck or back pain during their practical work. We get to the result that 85.3% of them had both neck and back pain. In contrast with the existing data we mentioned in the literature review, the study has gained the same result. Among these participants, the majority had both (back and nick) pain at the same time but the amount of these pains was various. For instance, some of them face a huge amount of back pain but a low level of neck pain. In the field of dentistry, major and minor surgeries and orthogenetic procedures need heavy and unusual positions while during endodontic, prosthodontics, and periodontics procedures cervical spines encounter pain due to anomalies and long procedures.

FIGURE-4 show back and neck pain sensation

In this part, we asked the respondents if they had these pains before starting practical work or not. The Study's main objective is to assess the prevalence of both neck and back pains in participants after that, we found that 67% of the population didn't have these pains before their work and many factors such as environmental, occupational, and many other increase the prevalence of this problems in dental practitioners. Here, we just focus on those participant who faces these kinds of pains after getting to the field of practical work in dentistry.

Figure-5 show that if they had this pain before starting the Job.



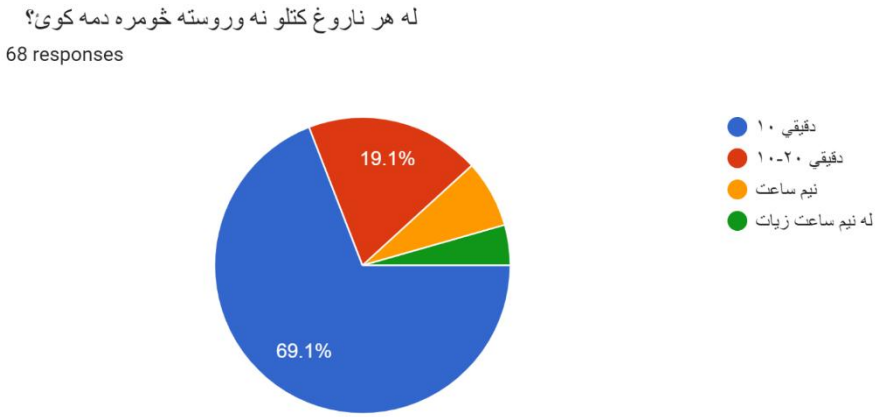
Study shows that 70.6% of the population doesn't visit any doctor for treatment of this pain. Most of them consider that this pain is not dangerous because they think that after work it will become normal but in reality, long-term pressures on lumber and cervical spines can cause severe damage to vertebral discs and eventually depress spinal nerves can cause more pain in the peripheral nerve and can disturb daily activities. In addition, 63.2% of the population doesn't have sufficient occupational consultations about their work and environments. The main reason for this problem is not existence of occupational health professionals in this province because a lot of dental practitioners don't know about the name of occupational health.

FIGURE-6 the diagram shows participants' visits to the doctor due to pain

The section of posture during work mostly in standing or sitting positions is the same 35.3% while 29.4% of participants work in both positions at the same time and change their position regularly. Also, another study shows that those who change their posture regularly in less risk than those who don't change their posture regularly because a regular change of position can cause relaxation of some muscles during work. Participants who work in sitting positions we classified them in three categories first who join their lower limbs during sitting second who separate their lower limbs from one another and third who cross their lower limbs during work seating positions.

In the part breaks, while visiting the patient, the data show that most of the populations have 10-minute breaks which is good. In this part, it is important that how the dentist uses the breaks and what they do in these ten minutes.

Figure-7 the diagram shows the participants' break after each patient examination

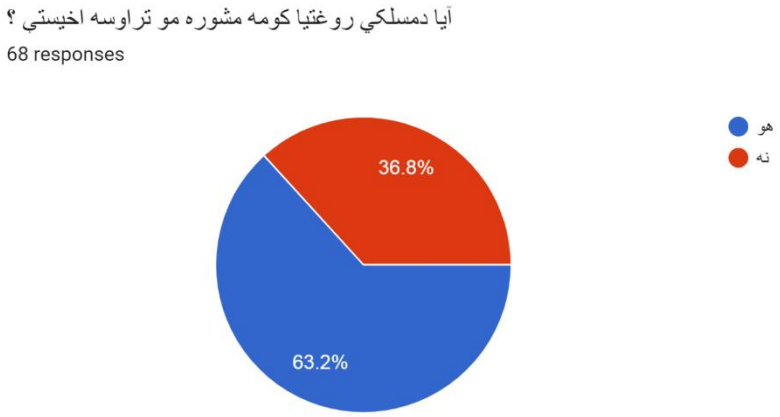


In general, the dentistry procedure takes many times when they examine patients and treat them. For those dentists who have assistants in their clinic no need to work hard because assistants can prepare patients before the procedure.

In dentistry, Ergonomic consultation is more important because a lot of dental personnel are not aware of ergonomic rules. There are many reasons one of them is the dental field in Afghanistan is in the primary and

new stage and they study only prostheses in medical institutes where they don't study public health and occupational health. The second reason is that in Afghanistan especially in Khost province is an absence of occupational health teams and institutions to train them about the risk factors and promote treatment.

Figure-8 the diagram shows participant's occupational health consultations



DISCUSSION:

In this study, we collect data from dentists based on demographical, professional, and occupational characteristics and who have worked for a minimum of 2 years in Khost province of Afghanistan. This Study shows that 85.3% of the population in Khost city had back and neck pain. The collected data show that 41.2% had both pains at the same time while 39.7% of the population had only back pain. This pain had many risk factors such as professional factors, environmental, and ergonomic factors. In the previous international study, we mentioned that between 35-80% of dental practitioners suffer from back and neck pain worldwide so this study resulted in the same amount of data. In this study, we find that 67.6% of the population didn't have pain before starting this work. Also, most of the participants of this study worked a long time in sitting or standing positions, and fewer of them maintained and changed their posture regularly participants who maintained their position could avoid pain due to relaxation of the musculoskeletal muscles and also found that most of them 64.7% work when their lower limbs join on another and this is the main risk of cervical spines pain because the joining of lower limbs to one another cause long space between doctor and their patients and dentists try to access the oral cavity properly twisting and try to go front their neck and this can cause neck pain due to long procedure. In addition, the low level of awareness or implementation of the position rules of the patient unit during procedures and this study shows that an increase in work increases both pains because 61.8% of dentists had 20 or more patients in a day. This is the main cause of pain during or after work. This study also shows that 70.60% don't visit the doctor for treatment because they consider this problem normally and aren't aware of self-care. The long term procedures that don't have relaxation exercises are another risk factor for neck and back rigidity and pain we find that most of them don't receive any occupational consultation because the most common cause of pain was unawareness of dentists of the rules of this work and environment due to not exciting occupational consultations team to consulate and train them.

Conclusion:

This study found that low back and neck pain prevalence in Khost City Afghanistan is higher and the back pain is more than neck pain. The prevalence of this pain affects daily activity and causes the effect of productivity. This study shows that a lot of dentists work more and work without any ergonomic consultation due to unusual posture and insufficient breaks between each patient lack of relaxation during breaks and lack

of exercise in daily activity. Also, we can see no exciting ergonomic rules and no implementation of occupational health programs that cause pain.

Recommendations:

This study reveals that there is a high prevalence of low back and neck pain in Khost Afghanistan. Therefore, we recommend that dentists have to work a maximum of 10 hours, break sufficient between each patient, improve their relaxation sports every day, make them aware of occupational health rules, and work hard with the health administrations to ensure their health care.

In addition, we recommend that the health sector should make rules and policies for the health care of doctors and implement them all over Afghanistan. For instance, limit working time for the doctors, standard working environment, and use standard instruments**.**

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