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Research Article

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Prevalence Of Temporomandibular Disorders Among Students at Hage Geingob Campus, Of the University of Namibia: A Cross- Sectional Study

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A Research Project Report Submitted in Partial Fulfilment of the Requirements for the Degree of Dental Surgery (Bchd) In the School of Dentistry, Faculty of Health Sciences and Veterinary Medicine, University of Namibia.

***Corresponding author:** Nana Akua Addae-Senyah, A Research Project Report Submitted in Partial Fulfilment of the Requirements for the Degree of Dental Surgery (Bchd) In the School of Dentistry, Faculty of Health Sciences and Veterinary Medicine, University of Namibia.

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Abstract

Background: *This study intended to investigate the prevalence of temporomandibular joint disorder (TMD) symptoms among students at Hage Geingob Campus, along with factors involved in the aetiology of the disorder.*

Methods And Materials: *The study included a sample of 155 students of the Hage Geingob Campus. Information required for the study was gathered by means of a questionnaire. The first part of the questionnaire was designed to collect the demographic variables of the participants, while the second part included ten questions related to the signs and symptoms of TMDs, based on Fonseca's Anamnestic Index (FAI), which was as well used to evaluate the presence and severity of TMDs.*

Data Collection and Analysis: *An online questionnaire generated using Google Forms was used to collect data. The data was gathered over a period of one month, and was analysed using Microsoft Excel, a spreadsheet software.*

Results and Discussion: *The results showed that approximately 59.35% of participants exhibited some signs of TMD. According to FAI, 40.65% of participants were classified as having no dysfunction, followed by mild (46.45%), moderate (9.68%), and severe dysfunction (3.23%). This significant prevalence underscores the importance of the problem statement which highlighted that TMDs, despite being a crucial topic in dentistry, are often poorly documented.*

Conclusion and Recommendations: *A high prevalence of mild TMD was found among the participants of this study. This study has established a solid framework for further research into TMDs, highlighting the significance of comprehending its prevalence and associated characteristics, particularly in persons exposed to situations that are academically challenging. As we go, it would be of benefit to broaden the research's focus to include students from different academic fields and institutions. Such a strategy would go beyond the boundaries of a specific academic setting and provide a comprehensive assessment of TMD prevalence and its contributing factors.*

Keywords: TMDs, Temporomandibular Area, Temporomandibular Disorder, Temporomandibular Joint, Fonseca's Anamnestic Index, Fonseca's Questionnaire, Hage Geingob Campus, Health Science, Prevalence, University Students.

Introduction

Background

Temporomandibular joint disorders (TMDs), also referred to as temporomandibular joint dysfunction, are conditions affecting the jaw muscles, the temporomandibular area, and the nerves associated with chronic facial pain [1]. Temporomandibular joint disorders are the most common cause of pain and dysfunction in the temporomandibular joint area. According to Huggins K. and Wright E., TMDs are the second most common cause of musculoskeletal pain, having a prevalence of about 33% in the

average population [2].

Epidemiological findings from prevalence studies conducted on temporomandibular disorders in patient and non-patient populations have been copious in the last 10 years. From these studies, it has been revealed that around 60% to 75% of the study subjects manifest at least one TMD sign, and that those signs were present in 50% to 75% of the population at some moment in time. Moreover, the clinical signs and symptoms can appear at any age, with peak incidence occurring in adults between 20 to 40 years. Interestingly, the risk of getting TMDs is higher in women, the reason for which is still unknown [3].

The aetiology of TMDs is a multifactorial combination of physical and psychosocial factors, with some of them being either poorly understood or difficult to assess [4]. Excessive strain on the jaw joints, physical injury, grinding or clenching of teeth during sleep, autoimmune diseases, infections, stress, dental surgery and trauma to the jaw are among the known causes of temporomandibular disorders [5].

The clinical manifestations of TMDs typically include pain in the temporomandibular joint area, restricted movements of the mandible associated with difficulty in full opening of the mouth, clicking, popping and grinding noises with movements of the mandible, headaches and earaches, to mention a few [6].

The multifactorial aetiology of temporomandibular dysfunction still remains a cryptic issue in available literature sources, however prevalence studies on TMDs are gradually becoming predominant, allowing for the establishment of epidemiological trends amongst study populations. Furthermore, these epidemiological patterns form the baseline for intervention strategies and help inform clinical judgement in dental practice. Studies which have investigated the occurrence of the disorder amongst university students do not highlight the frequency in larger student populations and are largely limited to dental students. This study however, investigated a larger multi-disciplinary student body.

This study was conducted at the University of Namibia's Hage Geingob Campus, which is a campus for health sciences. It assumed a descriptive cross-sectional study design. The purpose of the study was to determine the prevalence and severity of temporomandibular joint disorders (TMDs) among students at Hage Geingob Campus. The study's participants were those who were currently enrolled at Hage Geingob Campus. The subjects had a significant prevalence of mild TMD.

Moreover, the study strengthened the knowledge of aetiological factors that predisposed one to the development of TMDs, as reported by existing literature, thereby enhancing the reliability of previous findings, as well as the credibility of observations made.

Literature Review

In current times, temporomandibular disorders have been identified as a common pathological disorder, causing pain and dysfunction in the temporomandibular area, and awareness of this has amplified within the general population [7]. The prevalence of TMDs has been studied over the years, with multiple difficulties arising when evaluating the results from a wide range of literature. These difficulties include inconsistencies in judgement, research and publication bias, differing levels of skill between examiners, and most importantly, identifying the exact cause of TMDs, which for many years has been the centre of debate, therefore many propose a multifactorial cause for the disorder.

Epidemiology And Prevalence

General Population

A substantial number of studies concerning the epidemiology and prevalence of TMDs mostly discussed the frequencies of signs and symptoms of TMDs in the general population, while other studies looked at the prevalence of temporomandibular disorders among university students.

A study on the prevalence of temporomandibular disorders among the Lebanese population showed a prevalence of 19.7%, while recent studies reported even higher incidences of up to 25%, and 33% to 40% in the general population [8].

Another epidemiological study conducted across multiple countries revealed the prevalence of orofacial pain symptoms among the adult population, with approximately 5% to 60% of the population manifesting at least one sign of temporomandibular joint dysfunction.

Moreover, according to statistics from reviewed past literature, a higher prevalence of signs and symptoms was generally recorded among the female population, compared to males. Results from a prevalence study on temporomandibular disorders among Saudi Arabian adolescents showed that 21.3% of the subjects exhibited at least one sign of TMDs and females were generally more affected than males [9]. These results are in agreement with findings from another study conducted in Seattle, United States, which revealed that females had higher rates of TMDs pain at all ages, including a peak prevalence of 18% in the 25–44-year-old group, compared with 10% of males for the same ages.

As opposed to the previous findings, other studies revealed that the prevalence of temporomandibular joint disorder reaches its peak between 45 to 64 years of age, before decreasing with older age as older individuals seemed to have milder symptoms of the disorder [10].

University Students

Literature from studies which assessed the prevalence of temporomandibular disorders among university students revealed that TMDs and its associated symptoms are frequent among students of health and science studies.

A descriptive study on the prevalence and severity of temporomandibular disorders among 456 university students in Riyadh, Saudi Arabia, revealed that mild to moderate prevalence of TMDs appeared to exist among those students, ranging between 20% and 50%. Students who underwent dental surgery or orthodontic therapy, and had a history of trauma related to the temporomandibular region, manifested with symptoms. Studies confirmed a significant association between history of trauma and the presence of temporomandibular dysfunction. Histories of psychological stress and previous dental treatment were as well evident among these students [11].

In another study conducted by Indian doctors, 310 health science university students of PIMS university, Western India,

were examined for symptoms of temporomandibular dysfunction. Varying prevalence rates of 26% to 50% were reported. The results of the study showed that the symptoms of TMDs were remarkably prevalent among the student community. Of the 310 participants, 45.16% of students reported differing levels of the severity of TMDs: 34.83% had mild TMDs symptoms; 8.38% moderate TMDs symptoms, while 1.96% of the students showed severe symptoms. Moreover, an increased prevalence of symptoms was seen in students who described themselves as being tense. Due to the demanding curriculum at health science facility, these students were constantly under pressure, and were exposed to prolonged periods of studying, hence the tension. It was further revealed that students' academic lives were centred around anxiety, stress and other emotional disturbances, which, according to evidence from literature, exacerbated the symptoms of temporomandibular disorders [12].

The outcomes of both studies were in agreement, as histories of stress and tension were recorded among students in both studies. According to past studies, anxiety and depression were the most frequent clinical disorders in the general population, and were highly present among these students.

The variability in prevalence rates of both studies was minimal, and may be attributed to differences in the race of the population, in sampling design and criteria, sample sizes used and the methods used to collect data. The prevalence and severity of TMDs in both studies was determined using a self-reported anamnestic questionnaire.

Due to high prevalence and variability of complaints, TMDs is diagnosed by associating signs and symptoms as some characteristics may be frequent even in a non-patient population.

The Aetiology of Temporomandibular Disorders

The aetiology of temporomandibular disorders is complex and poorly understood. The aetiology is now considered to be multifactorial because even after various research on the origin of the disorder was carried out, the relative importance of individual aetiological factors is still controversial [13]. There are several factors that contribute to temporomandibular disorders, which are grouped into three categories. These factors are predisposing factors, initiating factors and perpetuating factors. Predisposing factors are factors which increase the likelihood of developing temporomandibular disorders. Initiating factors cause the onset of the disease, while perpetuating factors enhance the progression of TMDs.

Etiological factors include occlusal abnormalities, orthodontic therapy, habits such as grinding and involuntary clenching of teeth, trauma to the joint area, joint laxity and exogenous oestrogen. Psychological factors such as stress, mental tension, anxiety or depression can predispose to the development TMDs.

Manifestations (Signs and Symptoms) of Temporomandibular Disorders

Epidemiological studies revealed that about 60–70% of the general population has at least one sign of temporomandibular joint dysfunction (TMD), but only one out of four individuals are aware of these symptoms and reports them to a specialist.

A wide variety of symptoms is associated with the disorder, and these symptoms include jaw pain, headaches, earaches, unusual clicking, popping or grinding sounds upon movement of the jaw, pain that spreads across the face, neck and shoulders. Myofascial pain has been ruled out as the most common presentation of temporomandibular dysfunction.

Research Design and Methodology

Research Design

The study assumed a descriptive cross-sectional study design with a quantitative approach. The study was proposed to be cross-sectional and descriptive since the specific objectives intended to explore the prevalence of TMDs in university students at Hage Geingob Campus.

Aim

This study intended to investigate the prevalence of temporomandibular joint disorders (TMDs) among students at Hage Geingob Campus, along with factors involved in the aetiology of the disorder.

Objectives

The specific objectives of this study were as follows:

i) To understand the occurrence of TMDs among students at Hage Geingob Campus

ii) To assess the differences in clinical presentations of TMDs

iii) To explore the variability in aetiology amongst identified cases

Justification

The findings of this study estimated the frequency of symptoms associated with temporomandibular disorders among students at Hage Geingob Campus, and assessed the risk factors involved in the aetiology of TMDs.

Findings from a study that was conducted at SRM Dental College in India revealed that students in health and science colleges were more probable candidates for developing TMDs. The explanation for this was that the curriculum of these institutions possessed a greater study load, which could directly lead to greater levels of anxiety and stress, and emotional stress is considered to be a characteristic of TMDs.

Considering that Hage Geingob Campus is a health science campus, there was no doubt that the curriculums of the courses offered were highly structured and demanding. This study therefore strengthened the knowledge of aetiological factors that predisposed one to the development of TMDs, as reported by existing literature thereby enhancing the reliability of previous findings, as well as the credibility of observations made.

Ethical Consideration

The descriptive cross-sectional research project was approved by the Ethics Committee of the University of Namibia's School of Dentistry, and the Ministry of Health and Social Services. Participants gave their consent before participating in the study and were made aware that participation was voluntary. They were given the option to leave the study at any time, and the privacy of their responses was guaranteed. The study's questionnaire listed the study's goals and made it clear that participating

entailed no risks.

Methods

Sample Size and Sampling Method

Convenience sampling method was employed for this study. This approach was chosen due to practical constraints and aimed to maximize participation while conducting research within a limited timeframe. The ideal sample size for this study was calculated to be 385 students, based on previous research and the study population of 875 students. However, practical constraints and time limitations necessitated the use of a convenience sampling method, as only 155 responses to the questionnaire were received. This sample size represents approximately 17.7% of the total student population, significantly smaller than the initially intended sample size. The calculated ideal sample size of 385 would have provided a more robust representation of the population, but logistical factors limited our ability to reach that target.

Data Collection

A questionnaire created using the online data collecting platform Google Forms was used to collect the study's data. Between July and August 2023, the questionnaire was sent out to students at Hage Geingob Campus, and 155 responses—all of which were eligible for the study and met the inclusion criteria—were received. The questionnaire was divided into two sections: The first section of the questionnaire gathered demographic information about the participants, and the second section contained ten questions about the signs and symptoms of TMDs based on Fonseca's Anamnestic Index (FAI), which was also used to assess the presence and severity of TMDs.

Fonseca's Anamnestic Index (FAI) is a questionnaire that is used to screen for temporomandibular disorders, and assess the severity of TMD, based on its signs and symptoms. This index consists of 10 questions with 3 options of answers- "yes", "sometimes" and "no". Each ''yes'' answer was assigned a value of 10, each ''sometimes'' answer a value of 5, and each ''no'' answer a value of 0. The sum of the values for all 10 answers was used to classify each subject according to the criteria shown below:

Without dysfunction Score b/w 0-15
With mild dysfunction Score b/w 20-45
With moderate dysfunction Score b/w 50-65
With severe dysfunction Score b/w 70-100

Because it was simple to use, and allowed for data sharing and entry by multiple users, and offered a reliable data management platform that made data processing simple, Google Forms was a suitable data gathering tool.

Data Cleaning and Analysis

Descriptive statistics and frequency analyses of the collected data were performed using Microsoft Excel software, and are presented below:

Count: 155 participants had total scores.

Mean (Average): The average score was approximately 24.39.

Standard Deviation: The scores had a standard deviation of approximately 18.57, indicating the spread of the scores around the mean.

Minimum Score: The lowest score recorded was 0. Maximum Score: The highest score recorded was 85. 25th Percentile: 25% of participants scored 10 or below.

Median (50th Percentile): Half of the participants scored 20 or below. 75th Percentile: 75% of participants scored 35 or below.

TMD Classification Counts: Absence of TMD signs & symptoms: 63 participants; Mild TMD: 72 participants; Moderate TMD: 15 participants; Severe TMD: 5 participants.

Limitations

It was difficult to persuade participants to engage in the study by answering the questionnaire, especially since I had to use class representatives to distribute the questionnaire's link to the various class groups.

Results and Discussion

Results

Sex of Participants

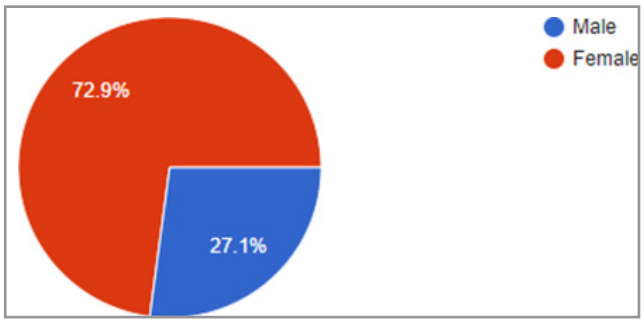
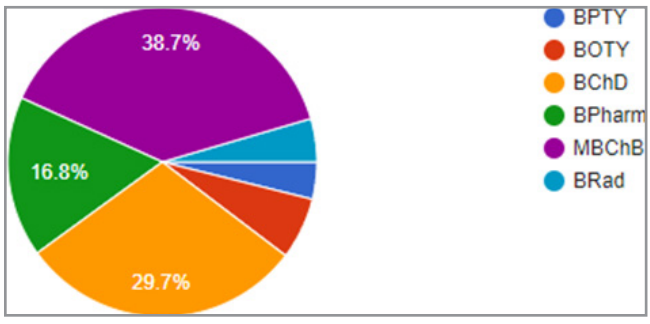


Figure 1: Distribution of Sex of Participants of the 155 participants, 42 (27.1%) were males and 113 (72.9%) were females.

Program of Study



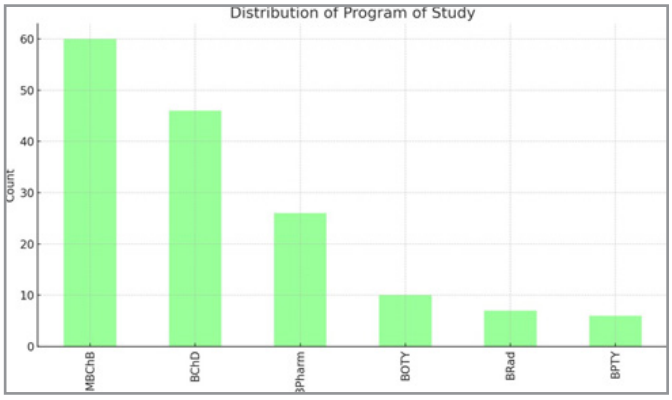


Figure 2: Distribution of Program of Study

Among the participants were 60 medical students, making up the majority of participants, 46 students studying dentistry, 26 studying pharmacy, 10 studying occupational therapy, 7 studying radiography, and 6 studying physiotherapies.

Year of Study

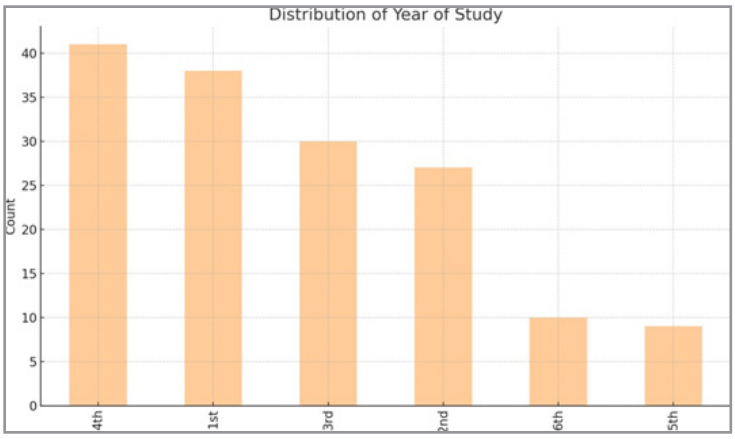


Figure 3: Distribution of Year of Study

38 participants were first-year students, followed by 27 second-year students, 30 third-year participants, 41 fourth-year participants, 9 fifth-year participants, and 10 sixth-year participants. The mean year of study was 2.91, which can be rounded to 3rd year.

Age

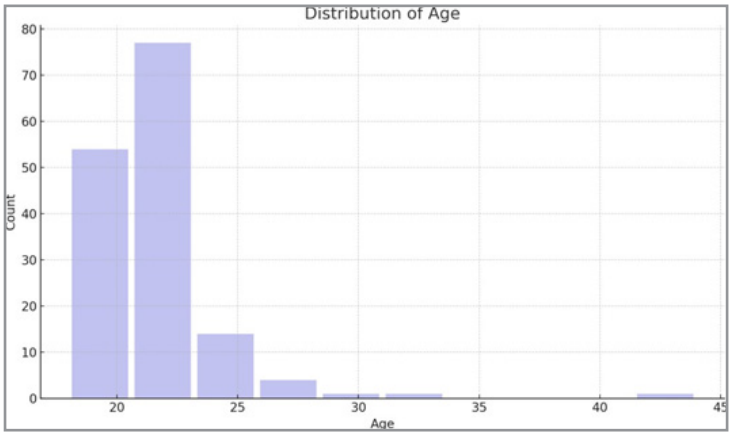


Figure 4: Distribution of Age The mean age of participants was 21.53 years

Symptom Profile

The responses to the questions on symptom profile of TMDs, total scores of participants for TMD assessment, and the percentages of participants with different levels of TMJ dysfunction based on the Fonseca's Anamnestic Index questions are presented below:

Table showing the responses for each of the signs and symptoms questions along with their respective p-values:

Table 1

Question	Yes	Sometimes	No	Total	P-value
1. Have you ever had difficulty in opening your mouth?	13	13	129	155	1.0000
2. Is it hard for you to move your jaw from side to side?	3	7	145	155	1.0000
3. Do you get tired or experience muscle pain while chewing?	28	41	86	155	1.0000
4. Do you have frequent headaches?	33	34	88	155	1.0000
5. Do you experience earaches or pain within your joint area?	23	21	111	155	1.0000
6. Do you clench or grind your teeth?	41	29	85	155	1.0000
7. Do you hear any noises (clicking or grinding sounds) from your TMJ while chewing or when you open your mouth?	25	22	108	155	1.0000
8. Have you ever sustained injury to your jaws, head or neck?	11	0	144	155	1.0000
9. Have you undergone orthodontic treatment before?	34	0	121	155	1.0000
10. Do you consider yourself to be under a lot of stress?	52	63	40	155	1.0000

Histogram showing the distribution of total scores for TMD assessment:

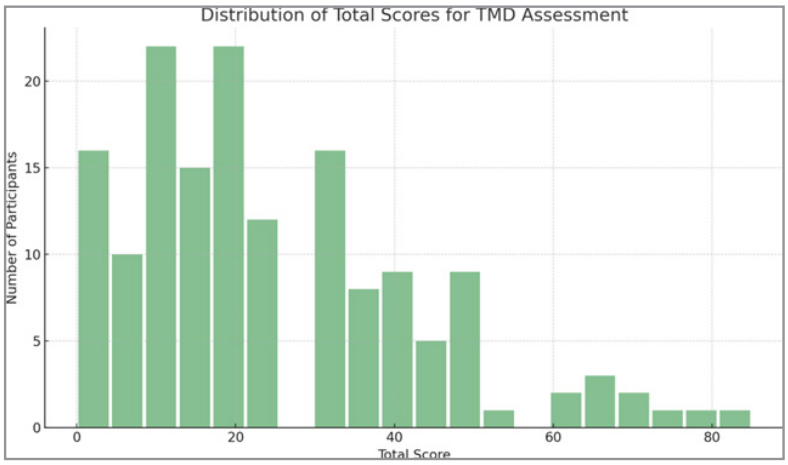


Figure 5: Distribution of Total Scores for TMD Assessment

Pie chart showing TMD classification percentages:

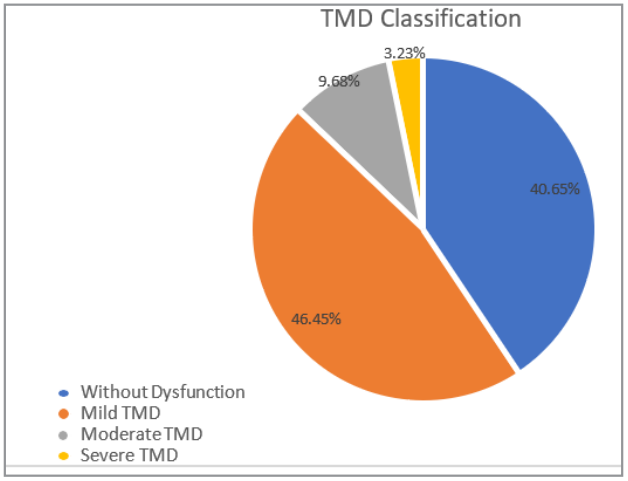


Figure 6: TMD Classification Percentages

63 participants (40.65%) were classified as having no dysfunction, as they did not have any signs and symptoms of TMJ dysfunction. 72 participants (46.45%) were classified as having mild dysfunction, while 15 participants (9.68%) had moderate dysfunction, whereas 5 participants (3.23%) were classified as having severe dysfunction.

Discussion

The complexity surrounding the multifactorial aetiology of temporomandibular dysfunction (TMD) remains an intriguing challenge within dental literature. While the increasing prevalence of TMD studies is shedding light on the epidemiological patterns among various populations, there is a distinct gap when it comes

to larger and more diverse student populations. This study aimed to bridge that gap, by focusing on a more diverse student population at Hage Geingob Campus.

Prevalence of TMD

The findings of this study revealed that approximately 59.35% of the participants exhibited some signs of TMD, either mild, moderate, or severe. Among the participants, 40.65% were classified as having no dysfunction, while 46.45% had mild dysfunction, 9.68% had moderate dysfunction, and 3.23% had severe dysfunction. This significant prevalence underscored the importance of the problem statement which highlighted that TMDs, despite being a crucial topic in dentistry, are often poorly documented. By analysing a more diverse student cohort, this study contributed valuable insights to the understanding of TMDs epidemiological trends, especially among university students from varied disciplines.

In a study conducted at PIMS University, a health science facility in Western India, 310 students were examined for TMD symptoms, resulting in varying prevalence rates ranging from 26% to 50%. Of these participants, 45.16% reported different levels of TMD severity: 34.83% had mild symptoms, 8.38% exhibited moderate symptoms, and 1.96% showed severe symptoms. These results highlighted the remarkable prevalence of TMD symptoms among students at PIMS University in Western India.

Discrepancies in the prevalence of Temporomandibular Disorders (TMDs) between this study and the research carried out at PIMS University in Western India can be attributed to several factors. These factors encompass variances in the composition of the study samples, including differences in the age, gender, and ethnic diversity of the participants in both studies. Moreover, disparities in sample size and the methods of selection could have influenced the reported prevalence figures. The study conducted at PIMS University utilized a larger and more diverse sample, which might have provided a more precise reflection of the population, whereas this study, with its significantly smaller sample size, may have contributed to variations in the reported prevalence of TMDs between the two studies.

Gender Differences and Stress

Notably, this study, like previous research, observed a higher prevalence of TMD symptoms among female participants. This gender difference in TMD prevalence remains a consistent finding in the literature and emphasizes the need for a deeper understanding of why women are more affected by TMDs.

Stress, which is often associated with the demanding academic environment in health science institutions, emerged as a significant contributing factor to TMDs in this study. The heightened stress levels among students, stemming from rigorous coursework and academic pressures, may exacerbate TMD symptoms. This finding reinforces the importance of stress management strategies in student healthcare and underscores the potential impact of stress on oral health.

Implications in a Health Sciences Campus

Drawing parallels with findings from SRM Dental College in India, the structured and demanding nature of curricula in institutions like Hage Geingob Campus can lead to elevated stress levels. Given that emotional stress is identified as a characteristic feature of TMDs, the environment in such academic settings can potentially amplify the risk factors associated with TMDs. This study, by focusing on Hage Geingob Campus, provided empirical evidence that reinforced this hypothesis.

Conclusion and Recommendations

Conclusion

In summary, this study has significantly expanded our understanding of Temporomandibular Disorders (TMDs), particularly within the academic setting of health sciences. The findings not only reaffirmed existing research but also delved deeper into the multifaceted nature of TMDs, shedding light on the variation in their causes and clinical manifestations. However, it is crucial to acknowledge the limitations of this study. The results may not be readily generalizable to other academic contexts or larger student populations due to the exclusive focus on health science students at a single institution, Hage Geingob Campus. Additionally, the use of convenience sampling, while practical, may not always capture a fully representative sample of the entire population, and may introduce potential selection bias, as participants who voluntarily opted to participate may not be entirely representative of the diverse student body at Hage Geingob Campus. The limited response rate and the relatively small sample size are acknowledged as significant limitations of this study. As such, the findings and conclusions drawn from this study may have a reduced ability to be generalized to the broader student community.

Recommendations

To build upon the insights gained from this study, several key recommendations should be considered. Firstly, expanding the research scope beyond the confines of a single institution, such as Hage Geingob Campus, would be highly beneficial. Including students from various academic institutions and fields in future studies would offer a more comprehensive understanding of Temporomandibular Disorders (TMDs), their prevalence, and contributing factors. Such an approach would help generalize findings to a broader student population.

Additionally, promoting continued research into TMDs is essential. Recognizing their prevalence and associated characteristics, especially among populations exposed to academically challenging environments, remains of paramount importance. This study has established a solid foundation for further investigations into TMDs, highlighting the need for comprehensive and diverse studies to advance our knowledge in this field. It is imperative to encourage researchers to delve deeper into this topic, addressing the multifaceted nature of TMDs and their implications for both oral health and overall well-being.

Declaration

I declare that Prevalence of Temporomandibular Disorders Among Students at Hage Geingob Campus, Of the University of Namibia: A Cross-Sectional Study is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Acknowledgements

I would like to express my gratitude to my supervisor, Dr Silas

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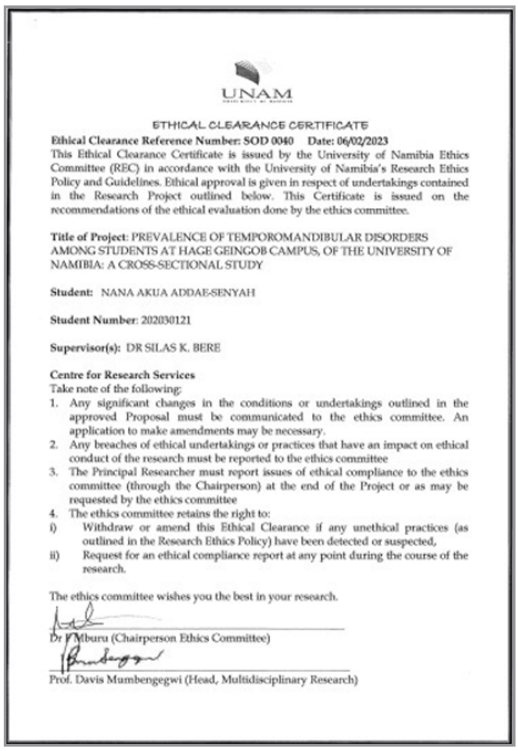
Appendices

Appendix A- Survey Questionnaire and Responses https://docs.google.com/forms/d/1M2RVHiNLUpiePjFcrGm3-67RpgKh-7VpmMb9EyXbotgQ/ edit?usp=drivesdk

Appendix B-SOD DEC certificate



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ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: SOD 0040 Date: 06/02/2023

This Ethical Clearance Certificate is issued by the University of Namibia Ethics Committee (REC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the ethics committee.

Title of Project: PREVALENCE OF TEMPOROMANDIBULAR DISORDERS AMONG STUDENTS AT HAGE GEINGOB CAMPUS, OF THE UNIVERSITY OF NAMIBIA: A CROSS-SECTIONAL STUDY

Student: NANA AKUA ADDAE-SENYAH

Student Number: 202030121

Supervisor(s): DR SILAS K. BERE

Centre for Research Services

Take note of the following:

1. Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the ethics committee. An application to make amendments may be necessary.
2. Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the ethics committee
3. The Principal Researcher must report issues of ethical compliance to the ethics committee (through the Chairperson) at the end of the Project or as may be requested by the ethics committee
4. The ethics committee retains the right to:

i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

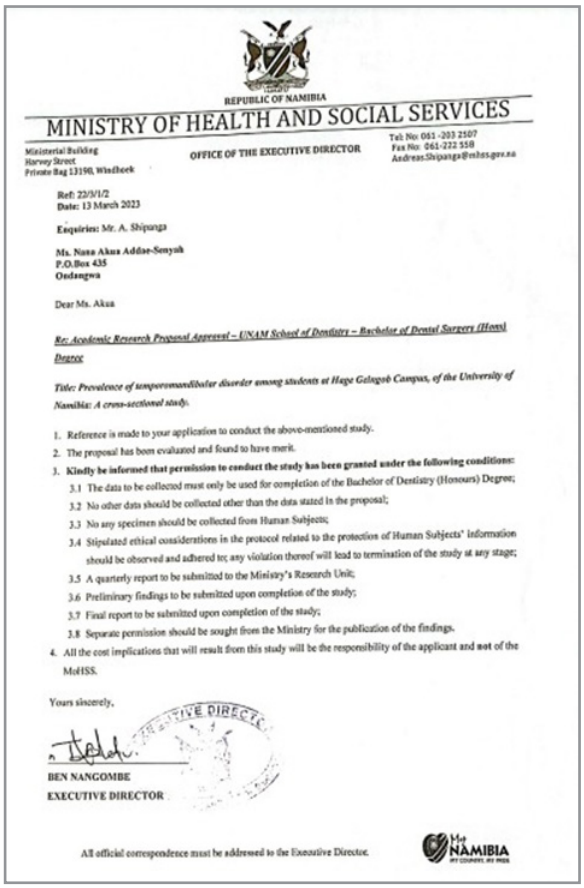
ii) Request for an ethical compliance report at any point during the course of the research.

The ethics committee wishes you the best in your research.

Dr F Mburu (Chairperson Ethics Committee)

Prof. Davis Mumbengegwi (Head, Multidisciplinary Research)

Appendix C-MOHSS Ethics Certificate



REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES

Ministerial Building
Harvey Street
Private Bag 13198, Windhoek

OFFICE OF THE EXECUTIVE DIRECTOR

Tel: No: 061 -203 2507
Fax No: 061-222 558
Andreas.Shipanga@mhss.gov.na

Ref: 22/3/1/2
Date: 13 March 2023

Enquiries: Mr. A. Shipanga

Ms. Nana Akua Addae-Senyah
P.O.Box 435
Ondangwa

Dear Ms. Akua

Re: Academic Research Proposal Approval – UNAM School of Dentistry – Bachelor of Dental Surgery (Hons) Degree

Title: Prevalence of temporomandibular disorder among students at Hage Geingob Campus, of the University of Namibia: A cross-sectional study.

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
   - 3.1 The data to be collected must only be used for completion of the Bachelor of Dentistry (Honours) Degree;
   - 3.2 No other data should be collected other than the data stated in the proposal;
   - 3.3 No any specimen should be collected from Human Subjects;
   - 3.4 Stipulated ethical considerations in the protocol related to the protection of Human Subjects' information should be observed and adhered to; any violation thereof will lead to termination of the study at any stage;
   - 3.5 A quarterly report to be submitted to the Ministry's Research Unit;
   - 3.6 Preliminary findings to be submitted upon completion of the study;
   - 3.7 Final report to be submitted upon completion of the study;
   - 3.8 Separate permission should be sought from the Ministry for the publication of the findings.
4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

Yours sincerely,

BEN NANGOMBE
EXECUTIVE DIRECTOR

All official correspondence must be addressed to the Executive Director.