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Napata College
Faculty of Dental Medicine - Semester 10 - Research Project

Research Project Thesis On :
**The Effects of Stress in the Oral and Periodontal Health Among Fifth Year
Dental Students in Napata College, 2024**

This Research Thesis Submitted To Napata College In Partial Fulfillment of
Requirements of BDM

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قال تعالى:

(قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لَا يَعْلَمُونَ إِنَّمَا يَتَذَكَّرُ أُولُو الْأَلْبَابِ)

[الزمر:9]

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Abstract :

Background: Stress is a significant concern among dental students due to the rigorous demands of their academic and clinical responsibilities. It is known to adversely affect overall health, including oral and periodontal health. Understanding the specific impacts of stress on dental students can help in developing effective interventions to mitigate these effects.

Aim and Method: This study aimed to assess the effects of stress on the oral and periodontal health of fifth-year dental students at Napata College in 2024. A cross-sectional survey was conducted among 49 students, collecting data on demographics, oral health practices, stress levels, and oral health issues. The relationship between stress and oral health was analyzed.

Results: The study found that 71.4% of the students were female, with the majority aged between 20 and 25 years. Oral health practices were generally good, with 51.3% brushing twice a day. However, 55.1% did not use dental floss regularly. Stress was prevalent, with 63.3% experiencing moderate stress levels, primarily due to personal, academic, and clinical workload pressures. Stress-related oral health issues included increased teeth grinding (38.2%), more frequent mouth sores (32.3%), and heightened tooth sensitivity (23.5%). Only 51% of students engaged in stress-relief activities.

Conclusions: The study concluded that stress significantly affects the oral health of dental students. Effective stress management programs, enhanced oral health education, and improved access to mental health resources are essential to support students in maintaining their overall well-being.

الخلاصة :

الخلفية: يُعد التوتر مصدر قلق كبير بين طلاب طب الأسنان بسبب المتطلبات الصارمة لمسؤولياتهم الأكاديمية والسريرية. من المعروف أن التوتر يؤثر سلباً على الصحة العامة، بما في ذلك صحة الفم واللثة. يساعد فهم التأثيرات المحددة للتوتر على طلاب طب الأسنان في تطوير تدخلات فعالة للتخفيف من هذه التأثيرات.

الهدف والطريقة: هدفت هذه الدراسة إلى تقييم تأثير التوتر على صحة الفم واللثة بين طلاب السنة الخامسة في كلية نبتة لعام 2024. تم إجراء دراسة مستعرضة شملت 49 طالباً، حيث تم جمع البيانات حول الخصائص الديموغرافية، وممارسات صحة الفم، ومستويات التوتر، ومشاكل صحة الفم. تم تحليل العلاقة بين التوتر وصحة الفم.

النتائج: أظهرت الدراسة أن 71.4% من الطلاب كانوا من الإناث، وكانت الغالبية في الفئة العمرية بين 20 و 25 عاماً. كانت ممارسات صحة الفم عموماً جيدة، حيث قام 51.3% بتنظيف أسنانهم مرتين في اليوم. ومع ذلك، لم يستخدم 55.1% من الطلاب الخيط بانتظام. كان التوتر منتشرًا، حيث شعر 63.3% بمستويات توتر متوسطة، بسبب ضغوط شخصية وأكاديمية وأعباء سريرية. تضمنت مشاكل صحة الفم المتعلقة بالتوتر زيادة في طحن الأسنان (38.2%)، وزيادة تقرحات الفم (32.3%)، وزيادة حساسية الأسنان (23.5%). فقط 51% من الطلاب شاركوا في أنشطة تخفيف التوتر.

الاستنتاجات: خلصت الدراسة إلى أن التوتر يؤثر بشكل كبير على صحة الفم لدى طلاب طب الأسنان. إن برامج إدارة التوتر الفعالة، وتعزيز تعليم صحة الفم، وتحسين الوصول إلى موارد الصحة النفسية أمر ضروري لدعم الطلاب في الحفاظ على صحتهم العامة.

Chapter One :

Introduction

1. INTRODUCTION :

1.1. Background :

Stress is a body's reaction to harmful stimuli, disrupting normal physiological balance and potentially leading to depression and anxiety. Stress can be categorized into acute and chronic forms. (1) Acute stress is a short-term response to a specific stressor, characterized by a "fight or flight" reaction, while chronic stress results from continuous exposure to stressors, leading to neurobiological and immune system dysfunction. Periodontitis is a multifactorial disease marked by destructive inflammation affecting the teeth and their supporting tissues.

Influenced by various risk factors, dental plaque is the primary cause, while genetic polymorphisms, socio-economic status, and lifestyle factors such as smoking and tobacco use also contribute significantly. (2)

Research has established a strong association between stress and periodontitis. In the 1970s, studies linked gum disease with psychological factors like stress, anxiety, and depression. DeMarco's concept of "periodontal emotional stress syndrome" highlighted the impact of stress experienced by Vietnam War soldiers on their periodontal health. Mental health significantly influences oral hygiene. (3)

Psychological issues can lead to neglect of oral care, resulting in plaque accumulation and adverse periodontal health. Studies indicate that stress, particularly in university students, reduces oral hygiene and increases inflammatory markers like interleukin-1 β . Consequently, stress is recognized as a risk factor for gingival inflammation. (4) Psychological stress generally weakens immune response efficacy, contributing to periodontal health deterioration. Depression and anxiety, common psychiatric conditions linked to periodontitis, also have a biologically plausible connection. (5)

Despite the benefits of student life, it imposes unavoidable stresses, particularly on dental students facing academic pressure and competition. These stressors can lead to depression, anxiety, substance abuse, and suicidal thoughts, which negatively impact oral health.

Research indicates that psychological stress can lead to the neglect of oral hygiene practices, exacerbating the build-up of dental plaque and periodontal disease. Recent studies have shown

that the rigorous academic environment, particularly in dental schools, imposes significant psychological stress on students. (6) Factors such as tight academic schedules, high competition, clinical responsibilities, and the pressure to meet various academic and professional milestones contribute to this stress. Dental students, designated as health professional students, are particularly susceptible to these stressors, which can manifest as psychological stress, depression, and anxiety. This excessive stress is not only a mental health concern but also poses a risk to their oral and periodontal health. (7)

The relationship between psychological stress and oral health is complex and multifaceted. Stress can affect oral health behaviors, such as tooth brushing and flossing, leading to poor oral hygiene and increased risk of periodontal diseases. Furthermore, stress-induced immunosuppression can exacerbate inflammatory responses in periodontal tissues, leading to greater tissue destruction and disease progression. In light of the significant impact of stress on oral and periodontal health, this study aims to assess the effects of stress on periodontal health among fifth-year dental students at Napata College in 2024. By understanding the specific stressors and their effects on this population, the study seeks to contribute to the broader understanding of how psychological factors influence periodontal health and to inform strategies for improving oral health outcomes among dental students.

2.1. Problem Statement :

Stress is a widespread issue among university students, particularly dental students, due to their demanding academic and clinical schedules. Globally, 50% to 70% of dental students experience significant stress. Periodontal disease, characterized by inflammation and destruction of tooth-supporting structures, is influenced by factors including psychological stress. Stress can lead to poor oral hygiene, increased dental plaque, and heightened inflammation, all contributing to periodontal disease.

Fifth-year dental students at Napata College face similar academic and clinical pressures as dental students worldwide, resulting in high stress levels that negatively impact their overall and oral health. Despite the established link between stress and periodontal disease, there is a lack of specific research on how stress affects the oral health of dental students in Sudan.

This knowledge gap calls for a detailed investigation into the impact of stress on oral hygiene practices and periodontal health among these students. Understanding these effects is essential for developing interventions to support their mental and oral health, ensuring their well-being and professional competence.

3.1. Justification (Rationale) :

Dental students face unique and intense stressors, including rigorous academic schedules, clinical responsibilities, and high competition, which can significantly impact their mental health and potentially harm their oral and periodontal health. Poor oral health can have profound implications for overall health and well-being. It is essential to understand how stress specifically affects dental students, who are future health professionals, as their well-being is directly linked to their academic performance and professional development. Addressing stress-related oral health issues can improve their quality of life, academic success, and future professional competence. There is a lack of research on the effects of stress on the oral and periodontal health of dental students in Sudan. This study aims to fill this gap by providing evidence-based insights relevant to students at Napata College. By identifying the relationship between stress and oral health, this research can inform the development of targeted preventive strategies and interventions within the academic setting. These strategies can support students' mental and oral health, potentially improving dental education and health policies. The findings may enhance the quality of dental education and practice in Sudan by promoting a healthier and more supportive learning environment.

4.1. Objectives :

1.4.1. General Objectives :

To Assess The Effects of Stress in the Oral and Periodontal Health Among Fifth Year Dental Students in Napata College.

2.4.1. Specific Objectives :

To assess the practices of Dental students regarding oral health.

To assess the stress among fifth-year dental students at Napata College.

To Determine the relationship between stress and oral and periodontal health among fifth year dental students

5.1. Research Questions :

How is the level of stress score among fifth-year dental students ?

What are the main sources of stress among fifth-year dental students at Napata College ?

Does the fifth year dental students experience an oral health changes during stress attacks?

Chapter Two : Literature Review

2. LITERATURE REVIEW :

Vindhiya Varshini V and Arvina Rajasekar et al. conducted a study addressing the impact of stress on periodontal health among dental students. This research aimed to determine the effect of psychological stress on periodontal health. The study utilized a 10-item DAS (Depression, Anxiety, and Stress) questionnaire, validated and distributed among 100 undergraduate dental students from a private college. Periodontal parameters, such as the presence of pocket depth greater than 3 mm and clinical attachment loss, were also assessed. The results, analyzed using SPSS software (Version 23), showed that 64% of the students had pocket depths greater than 3 mm, and 63% had clinical attachment loss. The association between stress and periodontal parameters was statistically significant. The study concluded that students with severe levels of depression, anxiety, and stress exhibited increased pocket depth and clinical attachment loss, indicating that psychological factors adversely affect periodontal health. (8)

Lakshmi Kanth Kolaparthi et al. conducted a study addressing the association between stress and periodontitis among students from various professional colleges. The study included 360 students from medical, dental, pharmacy, nursing, engineering, and chartered accountancy programs, with 60 students from each group. The Depression, Anxiety, and Stress Scale (DAS) questionnaire was administered, and clinical examinations assessed the Oral Hygiene Index - Simplified (OHI-S), clinical attachment level (CAL), and Gingival Index - Simplified (GI-S). Statistical analysis using ANOVA, post hoc tests, and Pearson correlation indicated a significant association between stress and periodontal parameters ($P < 0.05$). Medical students showed the highest mean stress scores (10.78 ± 0.76) and elevated periodontal scores (OHI-S: 1.61 ± 0.15 , CAL: 3.68 ± 0.79 , GI-S: 1.43 ± 0.15). The study concluded a strong association between stress and periodontal disease, adversely affecting oral hygiene among students. (9)

Engku Ahmad Muzhaffar et al. conducted a study addressing the association between perceived stress, severity of xerostomia, and periodontal status in dental students. The research involved a two-phase cross-sectional study of 245 undergraduate dental students at

Universiti Sains Malaysia (USM). In Phase 1, the Perceived Stress Scale (PSS-10) and Summated Xerostomia Inventory (SXI) were administered. In Phase 2, the Community Periodontal Index (CPI) was performed on 150 students to assess their periodontal status. Results indicated PSS-10 and SXI scores of 19.6 (SD 5.47) and 7.9 (SD 2.04), respectively. Periodontal status revealed 7.3% of students had healthy periodontium, 17.3% had gingival bleeding, 65.3% had calculus, 6.7% had shallow pockets, and 3.3% had deep pockets. Although no significant association was found between perceived stress, xerostomia severity, and periodontal status, a significant positive correlation existed between PSS-10 and SXI scores ($r = 0.318$, $p < 0.01$). The study concluded that while most USM dental students experienced some level of periodontal disease, it was not linked to perceived stress or xerostomia severity. However, students with higher perceived stress had more severe xerostomia, suggesting the need for the dental school to consider stress reduction strategies in their training programs. (10)

M. Shodan et al. aimed to evaluate perceived stress and its impact on gingival inflammation among medical students. The study utilized the Perceived Stress Scale questionnaire by Cohen and a self-administered questionnaire to assess potential stress factors among 85 subjects from a private medical college and hospital. Gingival inflammation was assessed using indices such as the Modified Quigley Hein Plaque Index, Loe and Silness Gingival Index, and Sulcus Bleeding Index. Results indicated that 85% of the subjects experienced perceived stress according to the Cohen Perceived Stress Score. Factors such as previous hostel stay (51.8%) and belonging to a nuclear family (75.3%) were associated with higher stress levels. However, perceived stress did not demonstrate a significant effect on gingival inflammation. The study concluded that a majority of first-year medical students experience perceived stress, with specific factors like hostel experience and family type correlating with increased stress levels. Importantly, while stress was prevalent, it did not show a direct impact on gingival inflammation. The authors recommended future longitudinal studies to further explore the effects of stress on oral health outcomes. (11)

Denise Corridore et al. conducted a literature review aiming to assess the association between psychological stress and periodontal disease. Chronic stress and inadequate coping mechanisms have been identified as mediators for the risk and development of periodontitis, impacting physiological functions and triggering psychosomatic diseases. The study systematically reviewed articles from electronic databases between 2017 and 2022, initially

identifying 532 articles, of which 27 met inclusion criteria after screening titles, abstracts, and full texts. The review confirmed a significant positive association between psychological stress and periodontal disease across most studies. Mechanisms explaining this relationship include stress-induced inflammation and impaired immune responses in periodontal tissues. The findings underscore the importance of considering stress as a risk factor in periodontal health assessments and treatment efficacy, advocating for preventive measures to mitigate chronic stress for both oral and general health purposes. (12)

Renate Deinzer et al. conducted a study to investigate the effects of psychosocial stress on oral hygiene behavior among medical students. The research included 16 matched pairs of students, each consisting of one student experiencing major academic exams (exam group) and one control student without current academic stress. Baseline plaque levels were matched between pairs, and all students received professional tooth cleaning at the beginning of the study. During the exams, students in both groups answered questionnaires regarding their oral hygiene habits, and they were later surprised with a second dental examination approximately 6 weeks after the initial cleaning. Results showed that on the last day of exams, a significantly lower percentage of sites were plaque-free in the exam group ($10.5\% \pm 9.3\%$) compared to the control group ($20.9\% \pm 18.3\%$, $p = 0.022$), especially on oral sites compared to vestibular sites. Additionally, exam students reported a reduction in the thoroughness of oral hygiene practices ($p = 0.019$) but not in the frequency. The study strongly supports the hypothesis that psychosocial stress can lead to neglect of oral hygiene and increased plaque accumulation. These findings underscore the importance of addressing stress management strategies among students to maintain oral health during periods of academic stress. (13)

Kun-Zhe Tsai et al. conducted a study to explore the associations between mental stress and oral health issues, specifically decayed teeth and localized periodontitis, in young adults. The study included 334 military recruiters in Taiwan, aged 19-45. Mental stress was assessed using the Brief Symptom Rating Scale-5 (BSRS-5), which covers anxiety, depression, hostility, interpersonal sensitivity, and insomnia, with a maximum score of 20. Participants with BSRS-5 scores above 5 were considered to have symptomatic mental stress ($n = 34$). Using multiple linear and logistic regression models, the study found a positive correlation between BSRS-5 scores and the number of decayed teeth ($\beta: 0.26$, 95% CI: 0.01–0.52). Those with more than two decayed teeth had a significantly higher risk of symptomatic mental stress (odds ratio: 3.59, 95% CI: 1.52–8.46). However, there was no significant

correlation between BSRS-5 scores and localized severe periodontitis. The study concluded that in young adults, decayed teeth, rather than localized periodontitis, were associated with increased mental stress. This finding suggests the importance of addressing dental decay to potentially alleviate mental stress in this demographic. (14)

Abanoub Riad et al. conducted a multi-centre, cross-sectional study to assess the oral health-related knowledge, attitudes, and behaviours of dental students in Lebanon, Syria, and Tunisia during the academic year 2019/2020. Using the validated Arabic version of the Hiroshima University Dental Behavioural Inventory (HU-DBI), which consists of twenty items plus four additional items on smoking, alcohol use, internet addiction, and dental check-ups, the study aimed to identify sociodemographic predictors of oral health outcomes. The study included 1430 dental students, with 60.8% being female and 57.8% in their clinical years. Among the participants, 24.5% were tobacco smokers, 7.2% consumed alcohol, and 87% reported internet addiction. The average HU-DBI score was 6.31 ± 1.84 , with Lebanon scoring highest (6.67 ± 1.83), followed by Syria (6.38 ± 1.83) and Tunisia (6.05 ± 1.83). Clinical students scored higher (6.78 ± 1.70) compared to preclinical students (5.97 ± 1.86). Courses in dental public health and preventive dentistry significantly improved students' oral health-related knowledge, attitudes, and behaviours. Gender differences were not statistically significant, although males showed a slight trend towards better oral health behaviours. Lower HU-DBI scores were associated with tobacco smoking, alcohol drinking, and problematic internet use. The economic status of the students' home country showed a weak correlation with HU-DBI scores. The study highlights the need for targeted interventions to improve oral health-related attitudes and behaviors among dental students, considering their future role in promoting oral health in their communities. (15)

Chapter Three :
Material & Methodology

3. MATERIAL & METHODOLOGY :

1.3. Study Design :

Observational, Cross-sectional Faculty Based Study

2.3. Study Period :

The Study was Take Place from 22 June 2024, To 5 July 2024.

3.3. Study Population :

The Study Mainly Focusing on Fifth Year Dental Students of Napata College, Male And Female students. Full Coverage Sample size.

4.3. Study Area :

This Study took place as Online Survey, Using Heart Survey Database, Including the Collections of the Data Regarding the Study, Using The Group's of Fifth Year Dental Students, after calculation of sample size, The Online Survey will automatically Off after completion of targeting Sample Size.

Faculty of Dental Medicine, Napata College Located in The Kafori, Bahri Locality, Khartoum State, Sudan. It Started in 2015.

5.3. Study Sample :

1.5.3. Sample Techniques :

Full Coverage, including all the students of 5th years in Faculty of Dental Medicine, Napata College

2.5.3. Sample Size :

Full coverage among all 5th year Dental students of Napata College. 49 Students were Included in this study.

6.3. Data Collections Method :

By Using an online Survey, Heart Survey, A Questionnaire Designing to collect the data regarding, Socio-demographic Character, Stress Score, and Questions regarding Oral Health. The Questionnaire was attached to this Report.

7.3. Data Analysis Method :

The Questionnaire was Entered in an Excel Sheet, then transformed to SPSS Version 25, After coding, the Analysis was done.

Ethical Consideration :

This Proposal was sended to obtain ethical approval from the Ethical Committee of Napata College.

After Approval of the Ethical Committee, A Written Consent was taken from all participants in this study

Chapter Four :

The Results

The Results :

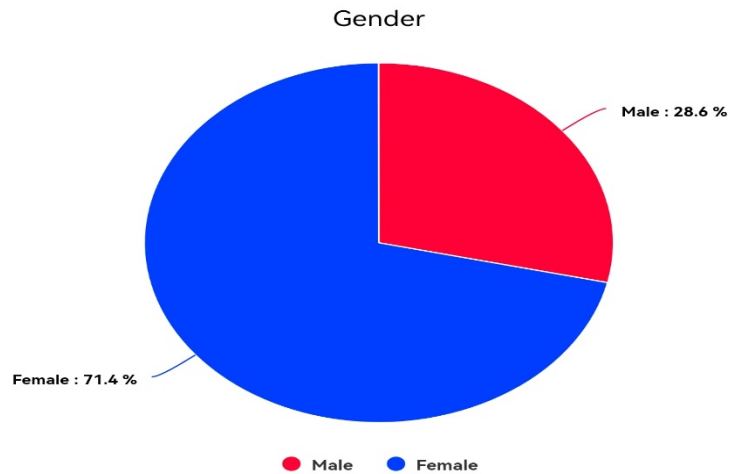


Figure (1) : Gender of Fifth Year Dental Students in Napata, (n = 49)

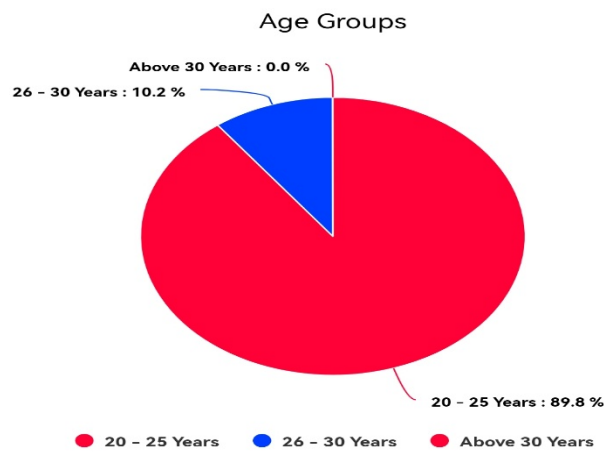


Figure (2) Frequency of Fifth Year Dental Students according to their Age Groups (n =49)

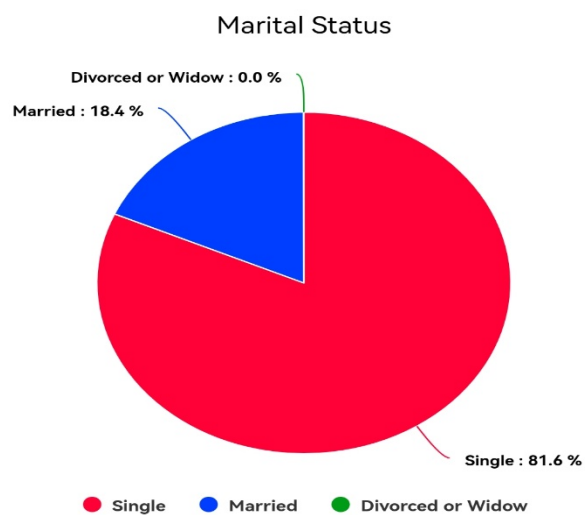


Figure (3) : Frequency of Fifth Year Dental Students in Napata College according to their Marital Status, (n = 49)

Table (1) : Distribution of Fifth Year Dental Students in Napata College according to their Dental and Oral Health Care, (n =49) :

Item	Category :	N (%)
Brushing teeth :	Once a day	22 (49.9%)
	Twice a day	26 (51.3%)
	> 2 a day	1 ((2%)
	Rarely	0 (0%)
Using dental floss	Yes	8 (16.3%)
	No	27 (55.1%)
	Occasionally	14 (28.6%)
Dentist Checkup	Every 6 Months	13 (26.5%)
	Every Year	7 (14.3%)
	On Necessary	26 (53.1%)
	Never	3 (6.1%)
Having Oral Disease or Issues :	Gum Bleeding	11 (20%)
	Toothache	17 (30.9%)
	Bad Breath	5 (9.1%)
	Mouth sores	1 (1.8%)
	None	21 (38.2%)
Experience of Dry Mouth :	Yes	8 (16.3%)
	No	41 (83.7%)

Table (2) : Distribution of The Fifth Year Dental Students in Napata College regarding assessment of the Stress, (n = 49) :

Item :	Category :	N (%) :
Feeling Stressed	Always	4 (8.2%)
	Sometimes	31 (63.3%)
	Often	7 (14.3%)
	Rarely	7 (14.3%)
Main Source of Stress	Financial concerns	11 (12.9%)
	Academic Pressure	25 (29.4%)
	Personal issues	32 (37.6%)
	Clinical Workload	17 (20%)
Street Scale :	< 4	5 (10.2%)
	4 - 7	33 (67.3%)
	8 - 10	11 (22.5%)
Engaging in Stress Reliever :	Yes	24 (49%)
	No	25 (51%)
Type of Stress Reliever :	Exercise	11 (26.8%)
	Medication / Yoga	2 (4.9%)
	Hobbies	12 (29.3%)
	Socializing	13 (31.7%)
	None	3 (7.3%)

Table (3) : Distribution of Napata College Students regarding relationship between Stress and Oral And Periodontal Health Among Fifth Year Dental Students, (n=49) :

Item :	Category :	N (%) :
Oral Health Change During Stress	Yes	26 (53.1%)
	No	22 (46.9%)
Type of Changes	Increased teeth grinding/clenching	13 (38.2%)
	More frequent mouth sore	11 (32.3%)
	Increased tooth sensitivity	8 (23.5%)
Believing about Stress Can affect Your Oral Health	Yes	25 (51%)
	No	24 (49%)

Chapter Five :
Discussion, Conclusions and Recommendations

5.1. Discussion :

Stress is a pervasive issue in modern life, significantly impacting various aspects of health, including oral and periodontal health. Dental students, particularly those in their final year, often experience high levels of stress due to the demanding nature of their studies, clinical responsibilities, and the anticipation of entering professional practice. This study aims to explore the specific effects of stress on the oral and periodontal health of fifth-year dental students at Napata College in 2024. By understanding these effects, we can better appreciate the broader implications of stress on dental professionals and potentially inform interventions to mitigate these adverse outcomes.

In the present study, we found that approximately 71.4% of the students were female. This result is similar to findings from other studies, such as a study by Kun-Zhe Tsai et al (14) which also reported that the majority of dental students were female. Among the 49 students in the fifth-year dental program, more than 89% were aged between 20 and 25 years, and about 81.6% were single. These demographics align with typical student populations in dental programs globally, as reported by Abanoub Riad et al. (15)

Regarding general oral health practices, about 49.9% and 51.3% of the students brushed their teeth once and twice a day, respectively. These rates reflect a relatively good level of oral health practice among dental students. However, 55.1% did not use dental floss, this is disagree with fact about Dental floss, stated “Regular use of dental floss is crucial for maintaining oral hygiene, as it helps prevent the buildup of plaque and tartar, which can lead to cavities and gum disease “ also flossing also reduces the risk of bad breath and contributes to overall oral health. Studies have shown that incorporating flossing into daily oral care routines significantly enhances the effectiveness of brushing alone in maintaining dental health. Additionally, 53.1% and 26.5% had regular dentist check ups as necessary and every six months, respectively, which can be considered good practice in maintaining dental and oral health.

When asked about oral diseases and issues, among the 49 students, 38.2% reported having no oral issues or diseases, 30.9% had toothaches, 20% experienced gum bleeding, 9.1% had bad breath, and only 1.8% had mouth sores. Moreover, 83.7% of students did not experience any dry mouth symptoms. Unlike Engku Ahmad Muzhaffar et al. (10) study, who reported a

higher percentage of students who experienced dry mouth. These findings suggest a relatively healthy oral status among the students, although the prevalence of toothache and gum bleeding indicates areas where stress might be influencing oral health. This results consider as higher than Abanoub Riad et al. (15) study.

Stress assessment among the fifth-year dental students revealed that 63.3% sometimes experienced on-and-off stress, 8.2% were always stressed, and 14.3% experienced stress often or rarely. The main sources of stress included personal issues (37.6%), academic stress (29.4%), clinical workload (29.4%), and financial concerns (12.9%). On the stress scale, about 67.3% had moderate stress (4-7 out of 10), 22.5% had severe stress (8-10 out of 10), and only 10.2% had mild to no stress (0-3 out of 10). This result was similar to results of Vindhiya Varshini V and Arvina Rajasekar (8) et al. who reported moderate stress among students also.

Interestingly, 51% of the students did not engage in any stress-relief activities, while 49% did. Among those who engaged in stress-relief activities, 31.7% socialized when feeling stressed, 29.3% engaged in hobbies such as drawing, music playing, or watching movies, 26.8% exercised, and only 4.9% used yoga or meditation. These results may reflect the broader context of medical students in Sudanese communities, where social stigma and fear around stress management practices might play a role.

In our study, we also assessed the relationship between oral health and stress among fifth-year dental students. About 53.1% reported changes in their oral health during periods of stress. These changes included increased teeth grinding/clenching (38.2%), more frequent mouth sores (32.3%), and increased tooth sensitivity (23.5%). These findings are consistent with the literature, which suggests that stress can exacerbate oral health issues, likely due to physiological stress responses and changes in oral hygiene behaviors during stressful periods. M. Shodan et al. (11), Renate Deinzer et al. (13), and Kun-Zhe Tsai et al. (14) all this researchers and their studies suggest that there are a direct correlation between the stress and oral health.

Among the fifth-year dental students at Napata College, 51% believed that stress could affect oral health, while 49% did not hold this belief. This split highlights the need for greater awareness and education on the impact of stress on overall health, including oral health. Stress is known to affect various body systems and organs, contributing to conditions such as cardiovascular diseases, gastrointestinal issues, and weakened immune responses. Therefore, understanding and addressing the effects of stress on oral health is crucial for promoting comprehensive health and well-being among dental students and professionals.

5.2. Conclusions :

Our study highlights a significant prevalence of stress among fifth-year dental students at Napata College and its notable impact on their oral and periodontal health. A substantial portion of students reported experiencing moderate to severe stress levels, primarily due to personal, academic, and clinical workload pressures. This stress was associated with various oral health issues, including increased teeth grinding, more frequent mouth sores, and heightened tooth sensitivity. Despite a relatively good practice level in oral hygiene, areas such as flossing and regular dental checkups need improvement. The findings emphasize the importance of stress management and its direct correlation with maintaining good oral health.

5.3. Recommendations :

- Introduce regular workshops and support groups focused on stress management techniques, including mindfulness, yoga, and meditation, to help students cope with academic and clinical pressures.
- Strengthen the curriculum to include comprehensive oral health education, emphasizing the importance of regular flossing and dental checkups, especially during stressful periods.
- Ensure that students have easy access to counseling and psychological support services to address personal and academic stressors effectively.
- Encourage students to engage in regular physical activity and hobbies that reduce stress, fostering a balanced lifestyle that supports both mental and oral health.

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