



بسم الله الرحمن الرحيم

كلية نبتة
NAPATA COLLEGE

Faculty of Dentist

Knowledge, Attitude and Practice about Oral Health among Medical Students in NAPATA College 2022

A thesis Submitted in partial fulfillment for requirement of DBS Degree in Dentist

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قال الله تعالى:

بسم الله الرحمن الرحيم

(وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِنْ طِينٍ . ثُمَّ جَعَلْنَاهُ نُطْفَةً فِي قَرَارٍ مَكِينٍ . ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً فَخَلَقْنَا الْمُضْغَةَ عِظَامًا فَكَسَوْنَا الْعِظَامَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ)

صدق الله العظيم.

(المؤمنون آية 12-14)

Dedication

We dedicate our research work to our family and many friends. A special feeling of gratitude to our loving parents, whose words of encouragement and push for tenacity ring in our ear. To our family and many friends have never left my side and are very special.

Acknowledgments

First we wish to thank Allah for granting us the Confidence and Success to complete this study. We wish to thank our supervisor who were more than generous with their expertise and precious time. A special thanks to **Dr. Fatma Kuna**, our supervisor for his countless hours of reflecting, reading, encouraging, and most of all patience throughout the entire process.

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List of Abbreviations

CRFA	Common risk factor approach
NCDs	noncommunicable diseases
TMD	Temporomandibular disorders
TMJ	temporomandibular joint
WHO	World Health Organization

Chapter One

Introduction, Rationale & Objectives

1. Introduction, Rationale & Objectives

1.1 Introduction

Oral health is essential for general health and well-being throughout life. Poor oral health and dental diseases like caries and periodontal disease can have a significant effect on quality of life as they might affect patients eating, drinking, swallowing, smiling and communication ^[1]. Though, oral health has always been neglected in the developing or underdeveloped countries ^[2]. In order to maintain a good oral health, proper and effective preventive measures must be practiced. Many studies have shown that there has been an association between good oral health and knowledge ^[3, 4, 5, 6]

Students who specialize in the dental or medical profession must have adequate knowledge regarding oral health as they come across a large number of patients with various age groups and diverse backgrounds during their course of the study. Thus, students play an important role in the enhancement of oral health of the people. Improvement in the oral hygiene basically involves a healthy and a clean mouth which is incorporated by proper brushing of teeth and flossing. This also helps in the prevention of decaying of teeth and gum diseases. A good oral health is directly associated with behavior of practicing correct methods regarding oral hygiene [7]. Apart from dental professionals it is very important for other health care professionals or medical doctors to have correct knowledge and awareness regarding oral health as they are more likely to encounter underserved and most vulnerable populations ^[8]. In future, Medical students will come across patients with oral and dental problems. Also, medical students have their own experiences of visiting a dentist and have definite attitude towards oral health rooting from their ethnicity, financial background and ways of living ^[3]. The knowledge and oral hygiene behavior of medical students play an influential role in oral health education of individuals and group, and act as role models for their patients and community at large. According to the research that is available, it is seen that emphasis has been laid on the oral hygiene habits rather than the knowledge and practices ^[9]. Therefore, the objective of this survey was to assess the Knowledge, Attitude and Practice of Medical students of Napata College regarding oral health.

1.2 Problem statement

- The prevention of oral disease the most accepted and efficient method for ensuring oral health. Oral health is now recognized to be equally important in relation to general health.
- The behavior of oral health care providers and their attitudes towards their own oral health reflect not only their understanding of the importance of preventive dental procedures but also helps in improving the oral health of their patients

1.3 Rationale

- Dental students are believed to be the role model among their families and friends and their better oral health is directly related to a community with an improved oral health status.
- It is important to know the level of knowledge among dental students in order to assess the need to take further actions in regard to the increasing of preventive programs.
- Senior dental students are expected to have a better knowledge about the prevention of oral diseases
- Researchers have found that oral hygiene practices among dental students are different by years of study in dental academic years
- This study was conducted in Sudan to assess the prevalence of anemia in children and to identify its determinants

1.4 Objectives

1.4.1 General Objective

- To estimate the knowledge, attitude and practice about oral health among Medical Students in NAPATA College 2022

1.4.2 Specific Objectives

- To describe general characteristic of children such as socio-demographic factors (age and gender)
- To assess the knowledge of oral health among Medical students of Napata collage
- To determine the Attitude of oral health among Medical students of Napata collage
- To assess the Practice of oral health among Medical students of Napata collage

Chapter Two
Literature Review

2. Literature Review

2.1 Oral health

Dentistry is the branch of medicine that deals with the diagnosis, prevention, and treatment of diseases/ conditions of the teeth, gums, and other structures of the mouth/jaws/face. In collaboration with medical and allied health professionals, dental specialists also manage a variety of medically related problems, including oral/jaw pathologies, orofacial trauma, head and neck tumors, obstructive sleep apnea, and temporomandibular-disorder-related (TMD) headaches and ear symptoms. Oral diseases are among the most common diseases found in humans. Despite their high social and economic burdens, oral diseases receive little attention in many countries and remain a neglected area of international health ^[10].

Oral health is defined as “a state of being free from mouth and facial pain, oral and throat cancer, oral infections and sores, periodontal (gum) disease, tooth decay, tooth loss and other diseases and disorders that limit an individual’s capacity in biting, chewing, smiling, speaking and psychosocial well- being” ^[11]. Table 2.1 shows the range of vital, social, and anti-social oral functions. Oral diseases can produce serious functional limitations, discomfort, and pain leading to disability (physical, psychological, or social), impairment, and handicap ^[12] for this reason, these diseases significantly impact quality of life for sufferers ^[13-15].

Table 2.1. Spectrum of oral functions

Vital Functions	Social Functions	Anti-Social Functions
• Biting • Chewing • DigestingTasting • Swallowing • Speaking • Breathing	• Smiling • Kissing • Whistling • Drinking • Licking • Sucking • Expressing • Attracting • Making music • Holding objects	• Spitting • Burping • Smoking • Swearing

2.2 Oral-systemic connections

A bi-directional relationship exists between oral and systemic health. Many systemic diseases (e.g., immune deficiency disorders) may appear first in the mouth. In addition, many drugs used to treat medical conditions can induce oral side effects, including xerostomia (dry mouth), dysgeusia (distortion in perception of taste), and stomatitis (inflammatory disease of the mouth) ^[16]. Some medical treatments may also result in oral infections and/or complications (e.g., rampant caries due to xerostomia caused by salivary gland damage from head and neck radiation therapy). Dental clearance is, thus, indicated prior to head and neck radiation therapy, chemotherapy, heart surgery, organ transplant, joint replacement and bisphosphonate therapy. Bisphosphonate therapy, in particular, can result in osteonecrosis of the jaws, especially in oncology patient populations (1% to 15%), in which high doses of such medications are employed ^[17]. Clearly, the adverse effects of inadequate oral care go beyond the oral cavity and can affect general (systemic) health and psychological wellness. Numerous chronic medical conditions are caused by or associated with infectious diseases. For example, periodontal disease (gum infection caused by oral bacteria) has been associated with adverse pregnancy, cardiovascular disease, pulmonary disease, and diabetic outcomes ^[18]. It has also been linked to erectile dysfunction in young adults ^[19]. Ultimately, oral diseases could lead to infection, inflammation, and other serious impacts on overall health ^[10].

2.3 Common dental diseases and conditions

Common dental problems include bad breath, periodontal (gum) disease, mouth sores, oral cancers, tooth decay, tooth wear, tooth loss, TMD, wisdom tooth issues and unattractive smiles. This section will briefly discuss the importance and/or high incidence of oral cancers, tooth decay, periodontal disease, and TMD. Oral cancer is the 8th most common cancer in the world ^[20]. Prevalence of oral cancers is relatively higher in men, older people, and people of lower education and income levels, with tobacco and smoking as major risk factors. Oral cancers can develop on the lip, tongue, oral mucosa, floor of mouth, base of tongue, and oropharynx. Signs and symptoms of oral cancers include (1) sore, irritated lumps or thick patches in lip, mouth, or throat, (2) white or red patches in mouth, (3) feeling that something is caught or stuck in the throat, (4) difficulty chewing or swallowing, (5) difficulty moving jaw or tongue, (6) numbness in the tongue or other areas of mouth, (7) swelling of jaw that causes poor fit or discomfort with dentures, and (8) pain in one ear without hearing loss. Early detection and referral are important, as oral cancers can

spread quickly. Nearly all adults have tooth decay, and severe periodontal disease occurs in 15 to 20% of middle-aged adults ^[21]. Tooth decay is the destruction of tooth structure caused by acid-forming bacteria in the presence of sugars (Figure 2.2).

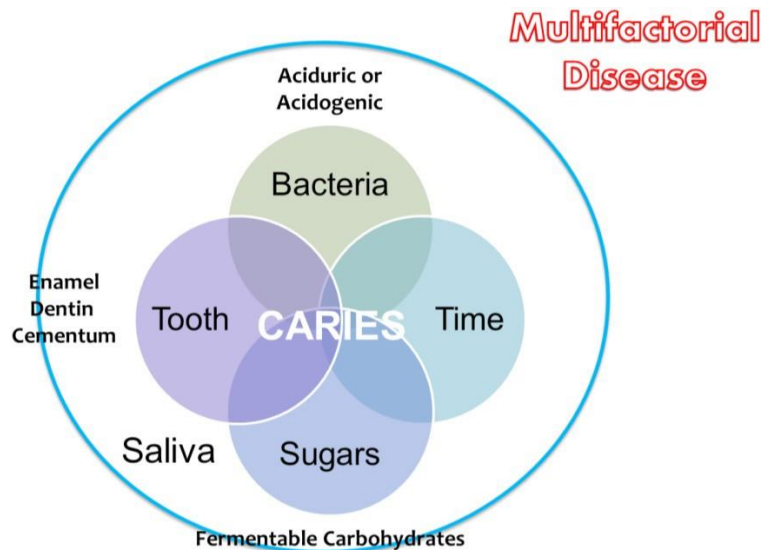


Figure 2.2. The multifactorial etiology of tooth decay ^[21]

Untreated caries in permanent teeth remains the most prevalent oral condition worldwide, affecting more than 2.4 billion people.¹³ Furthermore, the burden of untreated caries has shifted from children to adults, as three peaks in prevalence have been observed: at ages 6, 25, and 70 years. Increasing occurrences of untreated caries have been attributed to population growth and longevity and a significant decrease in tooth loss ^[22]. Signs and symptoms of tooth decay include: (1) toothache, (2) tooth sensitivity, (3) mild to sharp pain when eating or drinking something sweet, hot, or cold, (4) visible holes or pits in teeth, (5) brown, black, or white staining on any surface of a tooth, and (6) pain when biting down. Periodontal disease is an inflammatory disease that affects the soft and hard tissues supporting the teeth ^[18-21].

In the early stage (gingivitis), the gums become red and swollen due to bacterial inflammation. In the more advanced stages (periodontitis), bone loss and gum recession occur, and the teeth may become mobile and fall out. The signs and symptoms of periodontal disease include (1) bleeding gums when brushing and flossing, (2) red, swollen, or tender gums, (3) persistent bad breath, (4) pus between teeth and gums, (5) shaky, mobile, or separating teeth, and (6) changes in the way

teeth fit when biting. Tooth decay and periodontal diseases are the foremost reasons for tooth loss and acute orofacial pain ^[23].

Temporomandibular disorders (TMD) refer to a collection of medical and dental conditions affecting the temporomandibular joint (TMJ), masticatory (chewing) muscles, and associated structures. They are a major cause of chronic orofacial pain. TMD is more prevalent among women and people between 14 and 45 years old.¹⁶⁻¹⁸ Its contributing factors can be broadly divided into (a) anatomical (skeletal and occlusal relationships), (b) pathophysiological (systemic and local), (c) trauma (macro or micro), (d) genetic, and (e) psychosocial (depression, anxiety, stress, somatization, etc.) factors. TMD has been shown to negatively impact quality of life for its sufferers. The signs and symptoms of TMD include (1) headache, (2) jaw pain, (3) neck and shoulder pain, (4) ear pain, (5) ear congestion, (6) tinnitus, (7) jaw joint sounds, (8) jaw function difficulty, and (9) abnormal jaw movements ^[24].

2.4 Risk factors for oral diseases

Oral diseases share a wide range of intrinsic and extrinsic risk factors with other noncommunicable diseases (NCDs), like cardiovascular disease, cancer, diabetes, and chronic respiratory illness ^[21]. Intrinsic factors include age, sex, and hereditary features, while extrinsic ones comprise unhealthy diet (particularly, one high in sugars), smoking, and harmful alcohol consumption. Sugar intake is the leading risk factor for tooth decay, and its reduction as part of a healthy diet promotes better oral health and reduces the risk of diabetes, obesity, and other NCDs ^[13-15]. Smoking is a leading preventable cause of death and disease, including oral cancers and periodontal disease, and other conditions, such as premature tooth loss, tooth staining, and bad breath. Alcohol is a major risk factor for many diseases, including oral cancers and periodontal disease. Prevalence of oral diseases varies by geographic region, availability and accessibility of oral health services, and social determinants. It is higher in low- and middle-income countries as well as among poor and disadvantaged groups worldwide ^[22, 23].

2.5 Strategies for oral disease prevention and management

Strategies for oral disease prevention and management have been detailed by the FDI and encompass (1) preventing oral diseases and promoting oral health, (2) developing human resources for oral health and public oral health, (3) integrating oral health care into primary health care, (4)

inspecting, monitoring, and evaluating oral health information, (5) obtaining funding and establishing policies based on oral health priorities, and (6) Integrating oral health into public health programs ^[21].

Of foundational importance are oral disease prevention and oral health promotion. Approaches to oral health care have traditionally focused on curative treatment rather than population-based preventive interventions. The tremendous financial cost and human resources required for individualized curative care is unaffordable and unrealistic for many countries and cannot be sustained on a global scale ^[23]. Most oral diseases can be prevented through simple, cost-effective measures involving exposure reduction to known risk factors concomitant with fortifying oral health literacy and healthy oral behaviors. Oral health education is essential to motivating people-the public, patients, healthcare professionals, educators, policy makers, etc-to take action. As oral diseases share many risk factors with other major NCDs, a common risk factor approach (CRFA) has been proposed by the FDI World Dental Federation ^[21-23]. In addition to improving oral health, the CRFA also alleviates the global burden of NCDs when directed toward individuals, communities, and populations ^[24].

2.6 Previous studies

Several studies have been carried out regarding the oral hygiene behavior of dental students in many countries like Tunisia^[25] Japan, ^[26] Romania ^[27] among others. They have shown a progression towards better oral hygiene amongst dental students along with their academic progress and they all showed a remarkable improvement when the students switched to their clinical practice. Studies on the knowledge, attitude and behavior of university students towards oral health have been sparse and have primarily been conducted among dental or dental hygiene or medical students ^[28-30].

Oral health attitudes and behavior of dental students were evaluated frequently with this scale in several countries. A study carried out among a group of Turkish dental students reported that more dental health care education is effective and needed to improve oral health in Turkey [31].

The study carried out to assess dental attitudes and behavior among dental students in Jordan reported that the oral health attitude and behavior in Jordan was poor [32].

Kawamura et al reported that significant cultural differences in oral health attitudes, behavior and values were found in the freshman dental students from Japan, Hong Kong and Western China ^[33].

A study comparing Japanese and Finnish dental students reported that the Japanese dental students in their final year appeared to have better oral health behavior, as estimated by the HU-DBI than their Finish peers did ^[34].

Another study that explored the cross-cultural differences in the self-reported oral health behavior between Greek and Japanese dental students concluded that there were considerable differences in dental health attitudes/behavior between the students in the two countries, reflecting the different cultures and the health education systems ^[35].

Chapter Three

Materials & Methods

3. Materials & Methods

3.1 Study design

This study was cross sectional type of observational institutional-based study

3.2 Study duration

Data was collected from during period from Jun to Dec 2022.

3.3 Study area

The study was done in NAPATA College located at kaforie –North Khartoum is meant to contribute more substantially to the promotion, modernization and advancement of higher education values. Has six faculties which are (Medicine, Dentist, Pharmacy, Laboratory, Nursing and IT).

3.4 Study population

The study population were medical students from first and second year of the academic program of Dental, Medical and Pharmacy students at NAPATA College

3.5 Sampling techniques

It was conducted by A convenience sampling technique use of probability sampling (computerized simple random sampling) methods

3.6 Sample size

By using the equation the sample size (n) was calculated:

The sample was calculated using the following equation:

$$n = \frac{N}{1 + N(d)^2}$$

Where:

n = Sample Size

N = Total Population

d = Degree of Accuracy (0.05)

First Year = 321

Second Year = 314

138 study participants

3.7 Inclusion criteria

- All Student from first and second year of the academic program of Dental, Medical and Pharmacy students at NAPATA College were all included.
- all the students willing to participate in the study

3.8 Exclusion criteria

- Students who refuse to participate were excluded from this study

3.9 Study variables

- Dependent variables: level of Knowledge, attitude and practice regarding oral health among participants
- Independent variables: sociodemographic data such as: age, gender, academic level (number of year in college), Residence

3.10 Data collection

In this study, the main instrument for data collection was a structured self-administered questionnaire adopted from different sources like articles and research studies (10-17).

3.11 study instrumentation

The questionnaire consisted of 27 questions and was organized into four parts. The first part consisted from 6 questions included demographic data of university students such as age, gender, year of the academic program, residence, source of information and smoking status. The second part included 12 questions and evaluated the student's oral health knowledge. The third part included 5 questions and evaluated the student's attitude towards the dentist and dental treatment. The fourth and last part included 4 questions and evaluated the student's practice in relation to oral health.

Respond included multiple-choice questions in which the students were instructed to choose only one appropriate response from a provided list of options. Dental students were completely filled questionnaires that were subjected to statistical analysis.

- Knowledge was assessed by giving 2 to correct answer and 1 to the wrong answer. The scale measured knowledge from maximum 24 to minimum 0. Scores <13 were taken as poor, ≥ 13 as adequate Knowledge regarding oral health
- Attitude was assessed by giving 1 to positive and 0 to negative attitude. The scale classified attitude as positive with score >6 and negative ≤ 6 .
- Practice was assessed by giving 1 to positive and 0 to negative. The scale classified practice as good with score 3 and poor < 3 .

3.12 Ethical Considerations

An approval from Institutional Ethics Committee, NAPTA College. The objective of the study was explained to all participants, and their consent was taken. Participants who fulfilled the above criteria were included in the study after taking consent.

3.13 Data analysis

The collected data was analyzed by using the Statistical Package for Social Sciences (SPSS) for displaying frequency, mean and percentage. Descriptive statistics and correlation analysis was used to detect the association

Chapter Four

Results

4. Results

4.1 Demographic characteristics of respondents

After collection of data and its compilation, the following observations were made. Amongst the targeted population, the study population was conducted on 138 students. It consisted of 60% (n=83) were female students, and 40% (n=55) male students at the 1st, 2nd, 3rd, 4th and final years of the studied academic programs Figure 4.1, 4.2. Majority of students from Khartoum Figure 4.3 and more than half of students learn about oral health from media Figure 4.4 but only about 7% were smoker Figure 4.4

4.2 Assessment of Knowledge about oral health among Medical Students at NAPATA College 2022 (n=138).

Table 4.1 shows medical students' scores regarding their oral health knowledge. Results showed that more than 83% of medical students were agree that "It is possible to prevent oral diseases by brushing, flossing and avoiding sugar", in addition to "Neglecting oral health causes periodontal disease such as swollen and bleeding gingiva" and "Bleeding during brushing is a sign of gingival disease or wrong brushing technique". However, only 5.8% of medical students did not know about the previous statements. Almost more than half of respondents had the awareness about the composition and effects of dental plaque. Additionally, about two-thirds of the sample were aware about dental plaque components and effects. Meanwhile, less than half of medical students were aware that gingival bleeding is not a sign of tooth decay, also growing old is not a reason for teeth loss, as well as they knew that regular correct brushing technique can protect from gingival bleeding. The least proportion of medical students 29.7% were aware that tooth decay is infectious, however, 6.5% of them answered with "Do not know"

4.3 Assessment of Attitudes about oral health among Medical Students at NAPATA College 2022 (n=138).

Attitudes of the students towards oral care are summarized in table 4.2, which shows the following results: Nearly 85.5% of the students believed that regular visits to the dentist are necessary. In contrast, about 27.5% of them were slightly nervous regarding dental treatment. Forty seven percent of Medical students felt that the dentists give more importance to treatment rather than prevention. About 49.3% of them reported that they did not avoid a dental visit due to cost factor.

Moreover, 74.6% of them showed that private clinic was voted as the preferred place of visit for dental treatment.

4.4 Assessment of practices about oral health among Medical Students at NAPATA College 2022 (n=138).

Oral care practices of the students are summarized in table 4.3, which shows the following results: Approximately 74.6% of the students had visited a dentist at least once in their lifetime. Almost 90.6% of them brushed their teeth by toothbrush and toothpaste. About 53.6% of them brushed their teeth twice daily. Thirty five percent of them did not use any other oral hygiene methods in addition to tooth brushing

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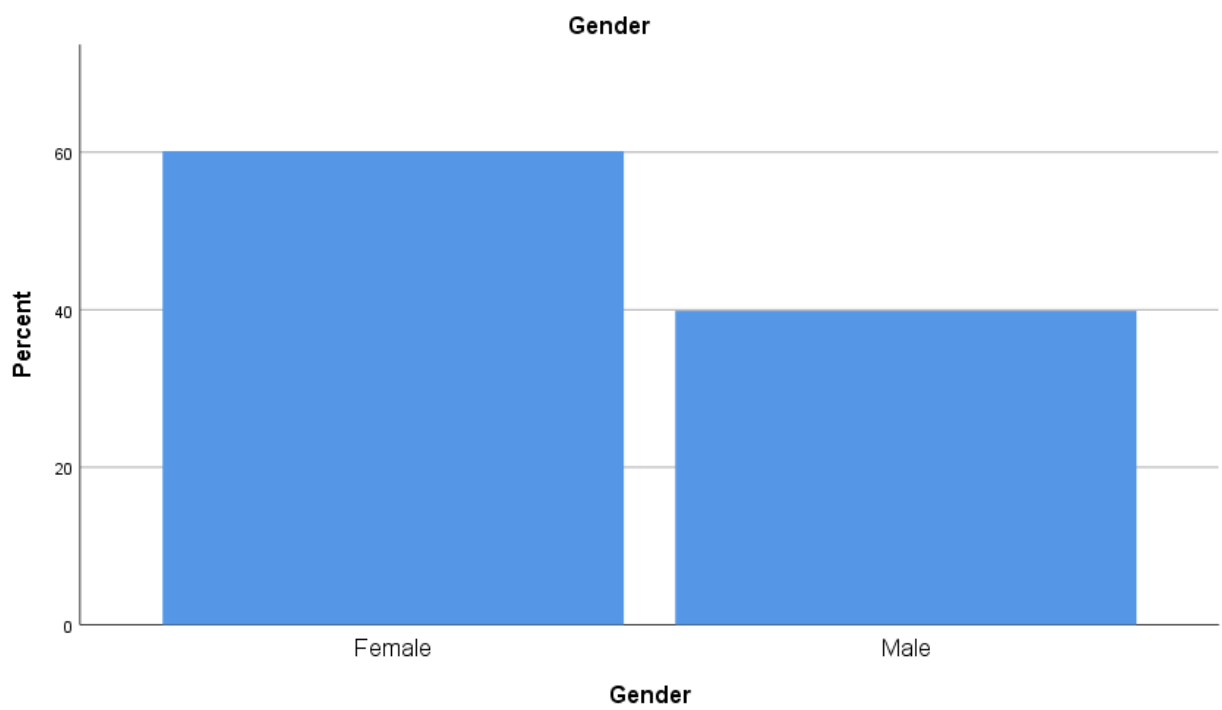


Figure 4.1: Distribution of students according to Gender

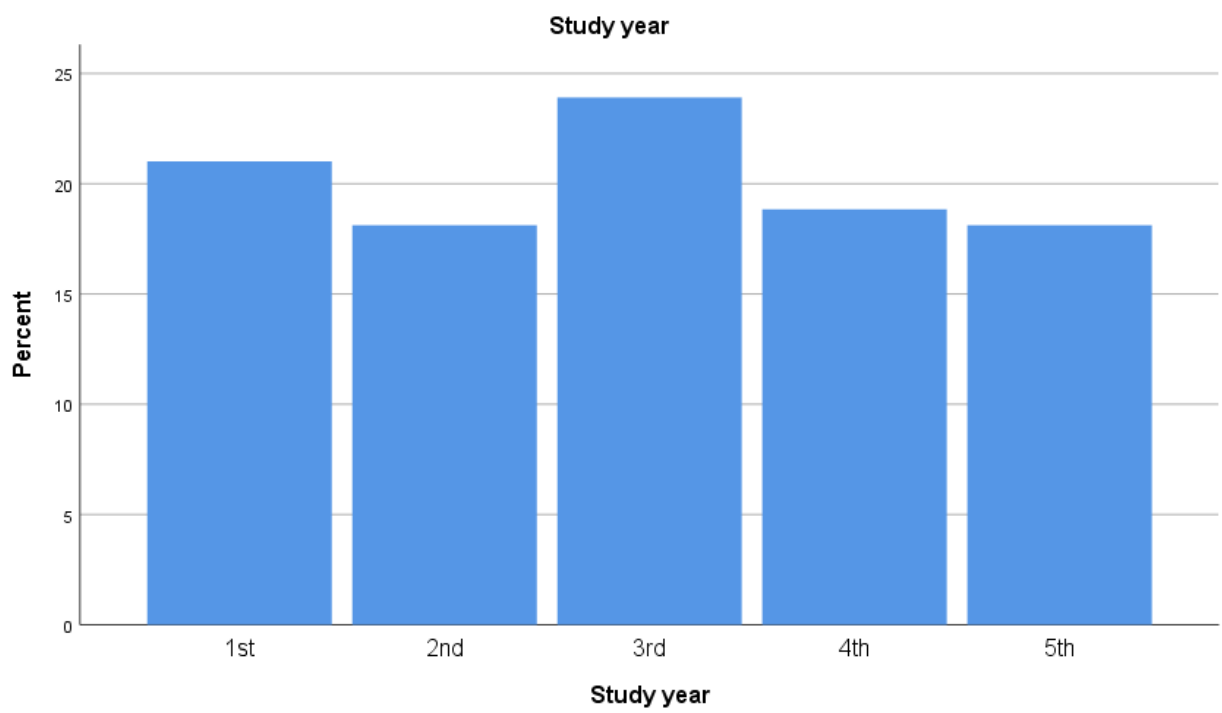


Figure 4.2 Distribution of students according to Academic level

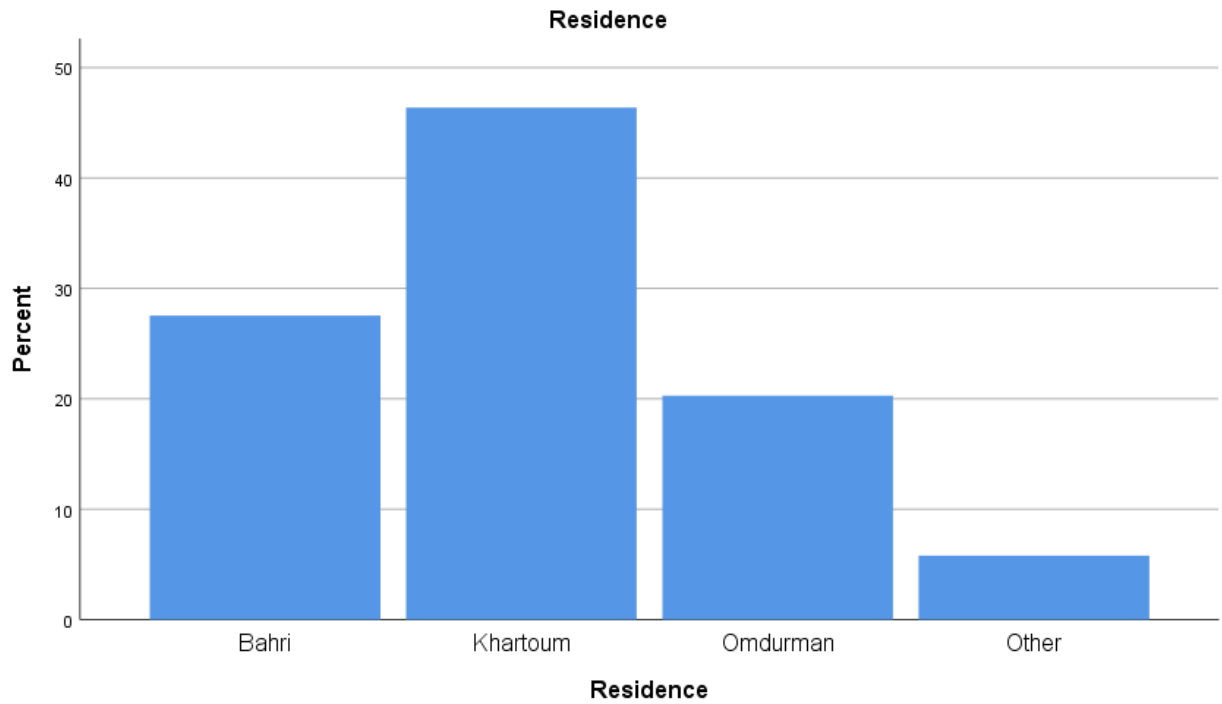


Figure 4.3 Distribution of students according to Residence

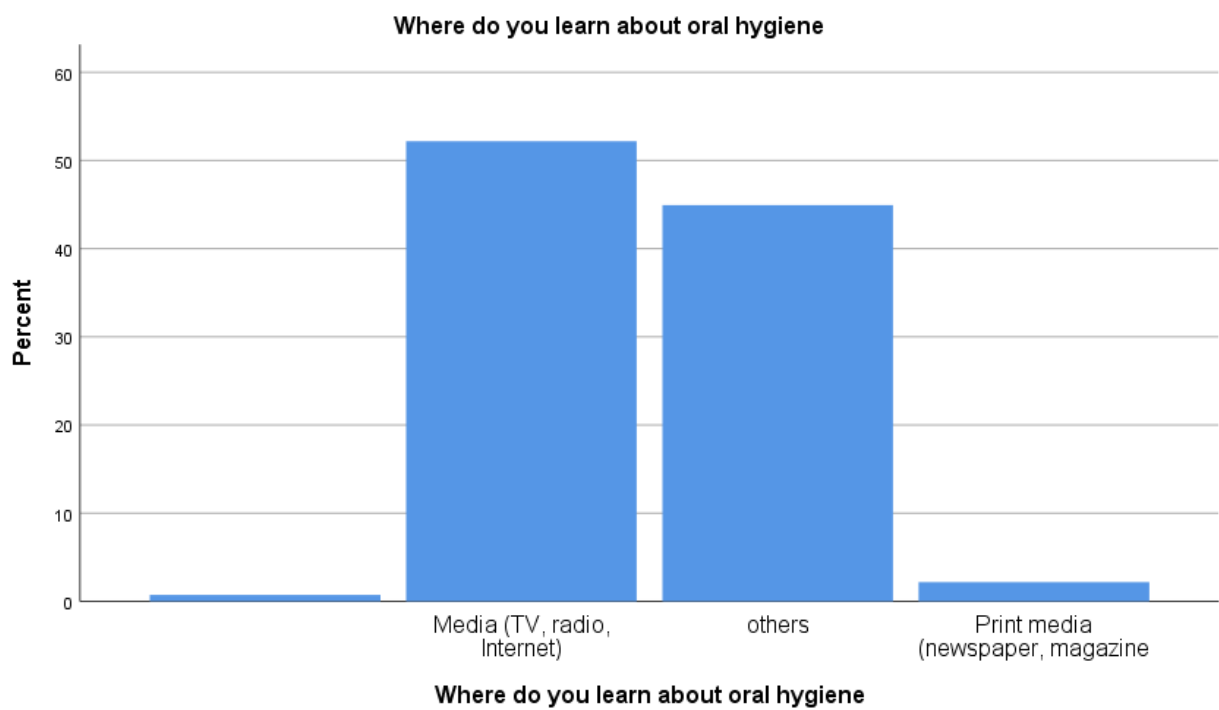


Figure 4.4 Distribution of students according to source of knowledge about oral health

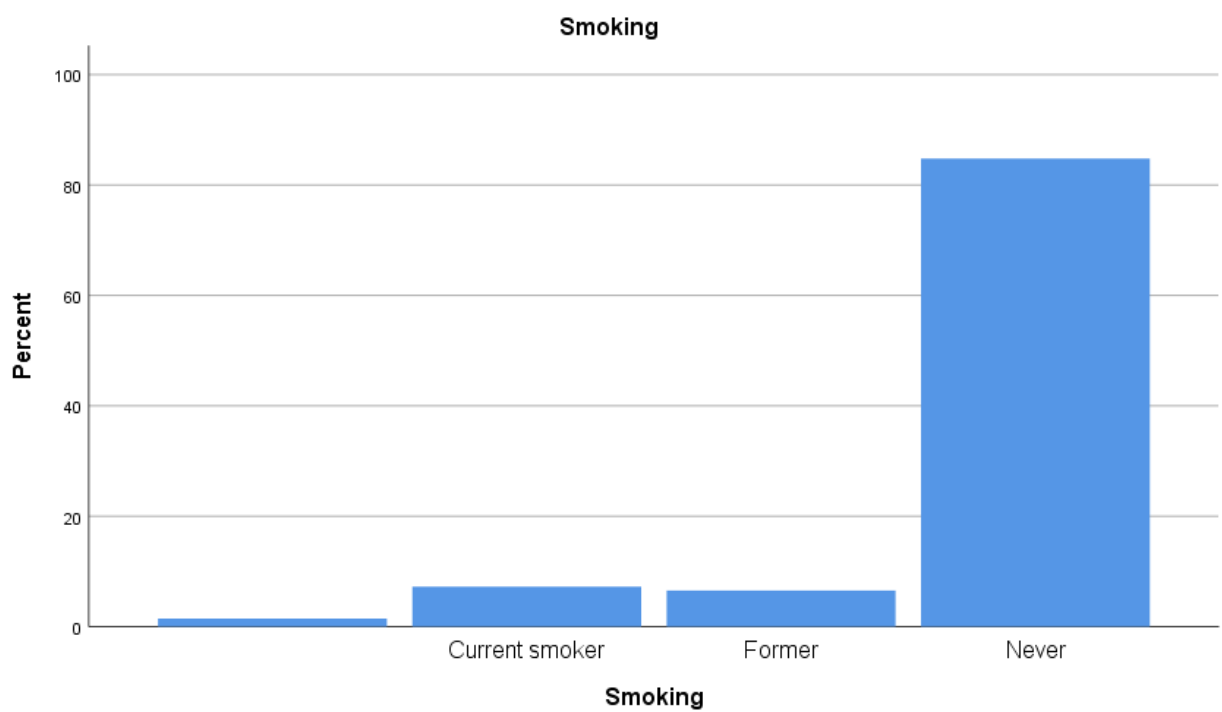


Figure 4.5 Distribution of students according to smoking status

Table 4.1 Level of Knowledge about oral health among Medical Students at NAPATA College
2022 (n=138).

		Frequency	Percent	Valid Percent	Cumulative Percent
It is possible to prevent oral diseases by brushing, flossing and avoiding sugar?	Agree	115	83.3	83.3	83.3
	Disagree	15	10.9	10.9	94.2
	Don't know	8	5.8	5.8	100.0
Neglecting oral health causes periodontal disease such as swollen and bleeding gingiva?	Agree	127	92.0	92.0	93.5
	Disagree	2	1.4	1.4	94.9
	Don't know	7	5.1	5.1	100.0
Bleeding during brushing is a sign of gingival disease or wrong brushing technique?	Agree	124	89.9	89.9	89.9
	Disagree	6	4.3	4.3	94.2
	Don't know	8	5.8	5.8	100.0
Dental plaque can lead to dental caries?	Agree	108	78.3	78.3	79.7
	Disagree	10	7.2	7.2	87.0
	Don't know	18	13.0	13.0	100.0
Dental plaque means food remnants and bacteria on teeth?	Agree	113	81.9	81.9	83.3
	Disagree	15	10.9	10.9	94.2
	Don't know	8	5.8	5.8	100.0
No pain in the mouth means the mouth is disease free?	Agree	36	26.1	26.1	26.8
	Disagree	90	65.2	65.2	92.0
	Don't know	11	8.0	8.0	100.0
Gingival bleeding is the first sign of tooth decay?	Agree	46	33.3	33.3	34.1
	Disagree	73	52.9	52.9	87.0
	Don't know	18	13.0	13.0	100.0
Tooth loss is a normal part of growing old?	Agree	85	61.6	61.6	62.3
	Disagree	47	34.1	34.1	96.4

	Don't know	5	3.6	3.6	100.0
Regular correct brushing of teeth does not protect from gingival bleeding?	Agree	39	28.3	28.3	29.7
	Disagree	65	47.1	47.1	76.8
	Don't know	32	23.2	23.2	100.0
Tooth decay is infectious (spread from person to person)?	Agree	41	29.7	29.7	30.4
	Disagree	87	63.0	63.0	93.5
	Don't know	9	6.5	6.5	100.0
Fluorides prevent dental decay?	Agree	107	77.5	77.5	79.0
	Disagree	9	6.5	6.5	85.5
	Don't know	20	14.5	14.5	100.0
Replacement of missing tooth improves oral hygiene	Agree	93	67.4	67.4	67.4
	Disagree	22	15.9	15.9	83.3
	Don't know	23	16.7	16.7	100.0
	Total	138	100.0	100.0	

Table 4.2 Level of Attitudes about oral health among Medical Students at NAPATA College 2022 (n=138).

		Frequency	Percent	Valid Percent	Cumulative Percent
Is regular visit to the dentist necessary?	Don't know	8	5.8	5.8	6.5
	No	11	8.0	8.0	14.5
	Yes	118	85.5	85.5	100.0
Does dental treatment make you nervous?	Extremely	36	26.1	26.1	29.0
	No	60	43.5	43.5	72.5
	Slightly	38	27.5	27.5	100.0
Do you think the dentists give importance to treatment than prevention?	Don't know	16	11.6	11.6	13.8
	No	54	39.1	39.1	52.9
	Yes	65	47.1	47.1	100.0
Have you ever avoided a dental visit due to cost factor?	No	67	48.6	48.6	50.7
	Yes	68	49.3	49.3	100.0
If you plan a dental visit, your preference would be?	Dental Hospital	33	23.9	23.9	25.4
	Private Clinic	103	74.6	74.6	100.0
	Total	138	100.0	100.0	100.0

Table 4.3: Level of practices about oral health among Medical Students at NAPATA College 2022 (n=138).

		Frequency	Percent	Valid Percent	Cumulative Percent
Have you ever visited a dentist? Have you ever visited a dentist?	No	31	22.5	22.5	25.4
	Yes	103	74.6	74.6	100.0
Do you brush your teeth by toothbrush and toothpaste?	No	6	4.3	4.3	9.4
	Yes	125	90.6	90.6	100.0
How many times in a day you brush your teeth?	Never	6	4.3	4.3	5.8
	Once	48	34.8	34.8	40.6
	Thrice	8	5.8	5.8	46.4
	Twice	74	53.6	53.6	100.0
Do you use any of these oral hygiene methods in addition to tooth brushing?	Dental floss	24	17.4	17.4	21.0
	Mouth wash	46	33.3	33.3	54.3
	None	49	35.5	35.5	89.9
	Tooth pick	14	10.1	10.1	100.0
	Total	138	100.0	100.0	

Chapter Five

Discussion, conclusion & Recommendations

5. Discussion, conclusion & Recommendations

5.1 Discussion

In Sudan, published data knowledge, attitudes and practices related to oral health of the medical students is not available, henceforth the current study intended to provide such information with regards to the medical students at Napata College in Khartoum state, and to provide a comprehensive overview which can help the planning and evaluation of the oral health promotion program in this region.

The major concern of oral health educators is to impact a positive oral health knowledge and practice in the society. This knowledge is usually obtained from information which subsequently translates into an action. Practice is an outcome measure when an action is sustained. Attitudes toward oral health determine the condition of the oral cavity^[36]. Health professionals play a pivotal role in providing knowledge regarding oral health and its significance among general public. The students of medical sciences should possess high level of awareness of self-oral health care, so that this attitude can be instilled among patients and community at large^[37].

This study demonstrated the involvement of 40% male students and 60% female students. Respondents involved in this study were students in the first class for form 1 and 2 in all participating schools. The percentage of participation according to sex demonstrated that relatively more female students were placed in the first class as compared to male students. This is in agreement with a study that found female students perform better in school than male students^[38].

In the present study, the scores of knowledge were high among medical students. This finding is in agreement with previous studies^[38, 39, 40]. Thirty five percent of medical students brushed twice daily. This finding is indicating to better oral hygiene measures adopted by dental students. Similar finding was reported by other studies^[37, 41, 42, 43]. But this is in disagreement with a study by (Al Ansari, et al. 2003) who reported that 85% of health science students brushed twice daily and other study by (Benjamin, et al. 2016) who showed that 77.5% of the dental students and 39% of the medical students brushed twice daily^[44, 45]. A total of 77.5% of the students felt that dental caries can be prevented by tooth brushing with fluoridated toothpaste. This result is in agreement with previous studies^[42, 45, and 46]. A higher percentage of the students regarding how often they should

floss their teeth. This finding is in disagreement with another study (Kumer, et al. 2017) who reported that 13.33% of the students flossed ^[37].

Smoking is a life style disease and many young people are addicted to smoking. In our study fortunately 97.1% students did not use tobacco. Similar results were observed by Lavanya et al where 93.6% of the dental students and staff, were found to be non-smokers ^[47]. According to a study conducted by Gopinath et al 18.1% of dental professionals had used tobacco at some point or the other ^[48]. In contrast study conducted by Arthie et al showed 24% of dental patients were smokers. Many studies have revealed that smoking has a negative effect on periodontal health ^[49, 50].

5.2 Limitations

This study has some limitations. Firstly, our study population is limited to college students in Anhui Province and is not representative of the national population. Secondly, this study is a cross-sectional study and does not allow for the elaboration of causal relationships

5.3 Conclusion

The results and analysis of this study showed that college students had good oral health knowledge and attitude, but unsatisfactory oral health practice.

5.4 Recommendations

On the basis of the findings in this study, the following recommendations have been made:

We recommend that oral health-related education be included and emphasized in universities

Further studies are required on a sufficient larger scale so that the ways to increase the promotive and preventive oral health practices can be identified (e.g., behavior change communication) to prevent the occurrence of oral health problems

Further emphasis on oral health is necessary in undergraduate training to improve the oral health attitude and practice among dental, medical and nursing students as they will act as role models for oral health education among individuals and community at large.

Chapter Six

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6.1 References

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6.2 Questionnaire

NAPTA College

Questionnaire

Knowledge, attitude, and practice regarding oral health among dental students in Napata College

Part 1: Socio-demographic characteristics of student

Age: Years

Gender:

Male ☐

Female ☐

Study year:

1st ☐

2nd ☐

other ☐

Residence:

Khartoum ☐

Bahri ☐

Omdurman ☐

Where do you learn on oral health?

Media (TV, radio, internet) ☐

Print media (newspaper, magazine) ☐

others ☐

Smoking:

Never ☐

Current smoker ☐

Former ☐

Part 2: A) Level of Knowledge regarding oral health

- It is possible to prevent oral diseases by brushing, flossing and avoiding sugar?

Agree ☐

dis Agree ☐

Don't know ☐

- Neglecting oral health causes periodontal disease such as swollen and bleeding gingiva?

Agree ☐

dis Agree ☐

Don't know ☐

- Bleeding during brushing is a sign of gingival disease or wrong brushing technique?

Dental Hospital ☐

Private Clinic ☐

C) Oral health practices of the students

➤ Have you ever visited a dentist?

Yes ☐

No ☐

➤ Do you brush your teeth by toothbrush and toothpaste?

Yes ☐

No ☐

➤ How many times in a day you brush your teeth?

Never ☐

Once ☐

Twice ☐

Thrice ☐

➤ Do you use any of these oral hygiene methods in addition to tooth brushing?

Mouthwash ☐

Dental floss ☐

Toothpick ☐

None ☐

-
- Knowledge was assessed by giving 2 to correct answer and 1 to the wrong answer. The scale measured knowledge from maximum 24 to minimum 0. Scores <13 were taken as poor, ≥ 13 as adequate Knowledge regarding oral health
 - Attitude was assessed by giving 1 to positive and 0 to negative attitude. The scale classified attitude as positive with score >6 and negative ≤ 6 .
 - Practice was assessed by giving 1 to positive and 0 to negative. The scale classified practice as good with score 3 and poor < 3 .