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Assessment of Oral Health Knowledge, Attitude and Practices among Medical Students of Taibah University in Madinah, KSA

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Authors' contributions

This research work was carried out in collaboration between both authors. Author ROM designed the study, wrote the protocol, collected and analyzed the data and wrote the first draft of the manuscript. Author OMO managed the literature searches, supervised the study throughout all its stages, guided and reviewed the analyses of the results, edited and prepared the final manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

Introduction: Oral health is as important as any part of the body and can greatly influence the human beings' normal life and well-being. Better oral health can be achieved with increased awareness and proper oral health practices.
Aim: The aim of this study was to evaluate oral health knowledge, attitude and practices among medical students of Taibah University in Al-Madinah, KSA.
Materials and Methods: An observational, cross-sectional study was applied among 119 medical students of Taibah University. A self-administrated close-ended questionnaire containing 27 multiple choice questions and one open ended question was distributed electronically, to assess

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oral health knowledge, attitude and practices toward oral health. According to the responses that were achieved through questionnaires, the data obtained were analyzed by using statistical software package SPSS version 16.0 and statistical significance was set at $P < 0.05$.

Results: A total of 119 medical students studying in fourth and fifth grades participated in this study. 79.8% of students recognized dental caries as black spots. The difference between males and females regarding dental caries knowledge was statistically significant ($P = 0.012$). According to 97.5% of students, oral health is important for overall body health. Most of students do not smoke (80.7%), there was gender difference regarding smoking ($P = 0.00$). The most common reason for not visiting the dentist among the study sample was absence of pain (46.2%).

Conclusion: Oral health knowledge among medical students was fair, attitude towards oral health stands good, while oral health practices were moderate.

Keywords: Oral health; knowledge; medical students; practices.

1. INTRODUCTION

In 1948 the World Health Organization expanded the definition of health to include “a complete state of physical, mental, and social well-being, and not just the absence of infirmity" [1]. Knowledge is defined as "understanding of or information about a subject which a person gets by experience or study, and which is either in a person’s mind or known by people generally" [2]. Oral health knowledge acquired by a subject is the basis that leads to proper oral health behavior. Attitude is defined as "a feeling or opinion about something or someone, or a way of behaving that is caused by this" [3]. Attitudes towards oral health determine the oral health of an individual.

Oral health is the mirror of general health, it enables an individual to smile, speak, eat, swallow, taste, smell, touch and socialize without active disease, discomfort or embarrassment and which contributes to his general well-being as well [4]. The relationship between periodontal disease and systemic diseases as stroke, heart and lung disease, preterm low-birth-weight infants and other diseases is well established [5].

Previous studies have shown that the main references for oral health knowledge are mass media, dental professionals, and dental literature [6]. The primary role of dental professional should be to positively encourage the knowledge and behavior toward good oral health in their society [7]. Studies have shown that there is a direct relationship between increased knowledge of oral hygiene and better oral health [8,9].

The young medical college students are expected to play an important role in health promotion and preventive information and publicize it among their family, their patients and community. Therefore, their oral health knowledge and attitude should be good to set an example to everyone. During undergraduate years of study it seems logical that knowledge, attitude and practices regarding oral health can be developed and modified. Medical students are subjected to multiple stresses as peer pressure, pressure of expectation to succeed, an uncertain future, difficulties in dealing with patients and integrating into the health system which might affect their oral health practices [10].

Studies tackling oral health knowledge, attitude and practices of University students show different results. Kakkad et al. [11] performed a cross-sectional study that was conducted among 500 engineering students of North Bangalore, and found that the awareness about oral health standards was satisfactory. Knowledge about dental floss and identification of dental caries was in adequate [11]. Another cross sectional study was performed by Naveenkumar et al. [12] which was conducted among 95 dental students from Sebha in Libya, and the result was not satisfactory. The authors concluded that dental students require training and motivation to self-implement the preventive dentistry measures.

Thus the aim of this study was to assess the oral health knowledge, attitude and practices among medical students enrolled in Taibah University, Al-Madinah, KSA.

2. MATERIALS AND METHODS

This study was an observational, cross-sectional survey of medical students attending College of Medicine, Taibah University, Al-Madinah, KSA. All fourth and fifth year students enrolled in the academic year 2016-2017 were invited to participate in this study. A self-administered, structured and close-ended questionnaire that would assess the self-reported oral health knowledge, attitude and practices was electronically distributed by Google Forms

through social Media as WhatsApp and Facebook. Electronically distributed questionnaire was selected in order to reach as many students as possible due to the difficulty to reach all students in the clinical years as they were distributed in rounds in different hospital departments. The sampling technique in the study was purposive sampling technique. The inclusion in study was voluntary; the size of the sample convenience. The questionnaire was anonymous to ensure confidentiality of the data. An introductory paragraph about the purpose of the study and ethical concerns constituted the first part of the questionnaire and indicating that completing the questionnaire is considered as consent to participate in this study. A total of 119 students completed the questionnaire.

The questionnaire was designed in English language and consisted of 27 multiple choice questions and one open ended question. The questionnaire was self-designed and adopted from other studies [11,13,14] All questionnaire items were previously validated in those studies.

The questionnaire used in this study consisted of four parts. The first part included demographic data (age, gender, level of study). The second part included oral health knowledge (12 questions) and consisted of questions about number of teeth, causes of caries and gingivitis, goal of tooth brushing and relation of systemic diseases to oral health. The third part consisted five questions about attitude toward the importance of oral health, teeth loss, artificial teeth, bleeding gums and proper tooth brushing. The fourth part consisted of eleven questions related to oral hygiene practices (oral hygiene methods used, brushing interval, brushing duration, frequency of sweet consumption, smoking and dental visits).

Ethical approval was obtained from the Research Ethics Committee of College of Dentistry in Taibah University before conduction of the study. Permission was also obtained from the administration of the University. The protocol number of Research Ethics Committee's approval is TUCDREC/20160204/Mulla.

2.1 Statistical Analysis

All data was tabulated with frequencies and percentages of answers, and then coded. Statistical analysis was performed and comparison between males and females was done by using the statistical software program (Statistical Package for the social sciences) SPSS version 16.0. Descriptive statistics was performed for the questionnaire items. Gender and level of study were set as independent variables to predict their effect on knowledge, behavior and practices. Statistical significance of any difference between the two genders or level of study had been done by using Chi-square test. Significance level was set at $P<0.05$.

3. RESULTS

A total of 119 medical male and female students form fourth and fifth year levels participated in this study. Table 1 shows the demographic data of the study sample.

Table 1. Demographic data of the study sample

Demographic data	N(%)
Age	
22	18 (15.1)
23	61 (51.3)
24	37 (31.1)
25	3 (2.5)
Gender	
Male	60 (50.4)
Female	59 (49.6)
Educational level	
Fourth Year	58 (48.7)
Fifth year	61 (51.3)
Total	119 (100.0)

Table 2 shows the responses of students to part one of the questionnaire (oral health knowledge). 79.8% (Male 35.3%, Female 44.5%) of students recognized dental caries as black spots and holes in the tooth, 12.6% (Male 7.6%, Female 5.0%) of students recognized dental caries through pain. Sugar and bacteria as the cause of caries was reported by 89.9% (42.0% Males, 47.9% Females) of students. The gender difference, regarding the knowledge of dental caries, was statistically significant ($P = 0.012$), and regarding the knowledge of cause of dental caries also ($P = 0.024$).

The higher percentage of students didn't know what is dental plaque (34.5%), whereas 26.1% considered plaque as calculus and 21.8% said stains on the teeth, only 17.6% knew that it is bacteria covering tooth surfaces. Concerning the question about cause of gingivitis, 29.4% (9.2% Males, 20.2% Females) answered that question correctly and chose plaque as the cause of gingivitis. The difference between males and females regarding the knowledge of the cause of gingivitis was statistically significant ($P = 0.023$).

Table 2. Oral health knowledge responses of medical students and gender comparison

Items	Male N(%)	Female N(%)	Total (%)	Chi-square	P value
How many permanent teeth are there in adult's mouth?					
20	1 (0.8)	2 (1.7)	3 (2.5)	4.751	0.191
28	14 (11.8)	8 (6.7)	22 (18.5)		
30	2 (1.7)	7 (5.9)	9 (7.6)		
32	43 (36.1)	42 (35.3)	85 (71.4)		
How do you notice tooth caries?					
Black spots and hole in the tooth	42 (35.3)	53 (44.5)	95 (79.8)	10.866	0.012*
Bleeding from gums	9 (7.6)	6 (5.0)	15 (12.6)		
Pain	2 (1.7)	0 (0.0)	2 (1.7)		
I don't know	7 (5.9)	0 (0.0)	7 (5.9)		
What causes caries?					
Sugar and bacteria	50 (42.0)	57 (47.9)	107 (89.9)	9.450	0.024*
Smoking	3 (2.5)	1 (0.8)	4 (3.4)		
Fluoride	0 (0.0)	1 (0.8)	1 (0.8)		
I don't know	7 (5.9)	0 (0.0)	7 (5.9)		
What is dental plaque?					
Bacteria covering tooth surface	9 (7.6)	12 (10.1)	21 (17.6)	1.862	0.602
Calculus/tartar	15 (12.6)	16 (13.4)	31 (26.1)		
Stains on the teeth	16 (13.4)	10 (8.4)	26 (21.8)		
I don't know	20 (16.8)	21 (17.6)	41 (34.5)		
What is gingivitis?					
Gum inflammation	59 (49.6)	59 (49.6)	118 (99.2)	0.992	0.319
Tooth loss	0 (0.0)	0 (0.0)	0 (0.0)		
Pain in the teeth	0 (0.0)	0 (0.0)	0 (0.0)		
I don't know	1 (0.8)	0 (0.0)	1 (0.8)		
What causes gingivitis?					
Plaque	11 (9.2)	24 (20.2)	35 (29.4)	9.540	0.023*
Smoking	17 (14.3)	7 (5.9)	24 (20.2)		
Teeth grinding	10 (8.4)	7 (5.9)	17 (14.3)		
I don't know	22 (18.5)	21 (17.6)	43 (36.1)		
What is the goal when we brush our teeth?					
To remove bacteria from all tooth surfaces	0 (0.0)	0 (0.0)	0 (0.0)	1.254	0.263
To remove food from tooth surfaces	12 (10.1)	17 (14.3)	29 (24.4)		
Neither a nor b (some other reason than to remove bacteria or food)	0 (0.0)	0 (0.0)	0 (0.0)		
Both a and b (to remove bacteria to remove food)	48 (40.3)	42 (35.3)	90 (75.6)		
Do you study oral health care as part of your education, what is included? (You can mark more than one option)					
Yes, oral pathology	17 (28.3)	10 (16.9)	27 (22.7)	5.268	0.384
Yes, oral medicine	10 (16.7)	7 (11.9)	17 (14.3)		
Yes, oral hygiene	8 (13.3)	6 (10.2)	14 (11.8)		
Yes, the oral cavity	14 (23.3)	21 (35.6)	35 (29.4)		
No, I don't	36 (60.0)	34 (57.6)	70 (58.8)		
Research studies have shown a link between periodontal (gum) disease and which of the following?					
Low Birth Weight Babies (premature babies)	1 (0.8)	2 (1.7)	3 (2.5)	2.813	0.590
Diabetes	21 (17.6)	18 (15.1)	39 (32.8)		
Heart Disease and Stroke	12 (10.1)	15 (12.6)	27 (22.7)		
None of the above	10 (8.4)	5 (4.2)	15 (12.6)		
a, b, and c	16 (13.4)	19 (16.0)	35 (29.4)		
Do you know of any oral diseases related to systemic diseases?					
Yes	34 (28.6)	37 (31.1)	71 (59.7)	0.452	0.502
No	26 (21.8)	22 (18.5)	48 (40.3)		
What is the commonest risk of infection for the dentist?					
Hepatitis B	20 (16.8)	34 (28.6)	54 (45.4)	8.563	0.036*
HIV/AIDS	13 (10.9)	12 (10.1)	25 (21.0)		
There is no risk in this career	2 (1.7)	1 (0.8)	3 (2.5)		
I don't know	25 (21.0)	12 (10.1)	37 (31.1)		
Total	60 (50.4)	59 (49.6)	119 (100.0)		

Table 3. Oral health attitude responses of medical students and gender comparison

Items	Male N (%)	Female N (%)	Total N (%)	Chi-square	P value
Do you think, oral health is important for overall body health?					
I agree	57 (47.9)	59 (49.6)	116 (97.5)	3.026	0.082
I disagree	0 (0.0)	0 (0.0)	0 (0.0)		
I don't know	3 (2.5)	0 (0.0)	3 (2.5)		
I believe that tooth loss is a normal part of growing old.					
I agree	30 (25.2)	27 (22.7)	57 (47.9)	0.331	0.847
I disagree	20 (16.8)	20 (16.8)	40 (33.6)		
I don't know	10 (8.4)	12 (10.1)	22 (18.5)		
I believe artificial teeth are less trouble than taking care of my natural teeth.					
I agree	6 (5.0)	5 (4.2)	11 (9.2)		
I disagree	47 (39.5)	42 (35.3)	89 (74.8)	1.679	0.432
I don't know	7 (5.9)	12 (10.1)	19 (16.0)		
If my gums bleed when I brush this usually means that I am brushing too hard and I should stop brushing my teeth.					
I agree	10 (8.4)	8 (6.7)	18 (15.1)	2.089	0.352
I disagree	43 (36.1)	48 (4.3)	91 (76.5)		
I don't know	7 (5.9)	3 (2.5)	10 (8.4)		
I believe I know how to brush my teeth correctly.					
I agree	41 (34.5)	35 (29.4)	76 (63.9)	2.796	0.247
I disagree	8 (6.7)	15 (12.6)	23 (19.3)		
I don't know	11 (9.2)	9 (7.6)	20 (16.8)		
Total	60 (50.4)	59 (49.6)	119 (100.0)		

The goal of tooth brushing was recognized correctly among most of the students (75.6%) Only 59.7% of medical students reported oral diseases related to systemic diseases, some of them mentioned diseases as infective endocarditis, diabetes mellitus, syphilis, and irritable bowel syndrome.

Almost half of students 45.4% (16.8% Males, 28.6% Females) stated that hepatitis B is the commonest risk of infection for the dentist. The knowledge of risk of infection between dentists was statistically significant between gender (P = 0.036).

Table 3 reveals that most of the students (97.5%) consider that oral health is important for overall body health. Nearly half of students (47.9%) believed that tooth loss is a normal part of growing old, whereas (33.6%) did not. The difference between males and females, regarding the oral health attitude was not statistically significant (P > 0.05).

Table 4 summarizes oral health practices of the study sample. Nearly half (44.5%) brushes their teeth twice a day, whereas 9.2% brushes less frequently, only 3.4% of students brush their teeth after every meal. Forgetting was the most reason for not brushing teeth between students (56.3%), followed by no time (21.0%). Most of the students (49.6%) brush their teeth with medium bristle toothbrush, and 26.1% use soft bristle toothbrush.

Most of the students 73.9% (31.9% Males, 50% Females) eat sweets daily, some of them 16.8% (Male 12.6%, Female 4.2%) occasionally, and only 9.2% (5.9% Males, 3.4% Females) eat once in a week. The gender difference, regarding the practice of eating sweets, was statistically significant (P = 0.024).

Most of students do not smoke 80.7% (Male 32.8%, Female 47.9%), some of them smoke occasionally 10.1% (Male 8.4%, Female 1.7%), and only few of males smoke daily (9.2%). The gender difference, regarding the practice of smoking cigarettes or bubbly, was statistically significant (P = 0.000).

34.5% of medical students had a dental visit in the last six months. Pain was the reason for visiting the dentist among most of respondents (45.4%). While the most common reason for not visiting the dental clinic was absence of pain (46.2%), also no sufficient time as reported by other students (36.1%).

4. DISCUSSION

The oral cavity is an integral part of the human body, so its health cannot be ignored as it has an effect on overall body health as

approved by researches. This research work revealed an overall view of the knowledge, attitude, and practices of oral health between 22-25 years medical students of Taibah University in Al-Madinah, KSA.

Table 4. Oral health practices responses of medical students and gender comparison

Items	Male N(%)	Female N(%)	Total N(%)	Chi-square	P value
How many times do you brush your teeth daily?					
Once daily	18 (15.1)	18 (15.1)	36 (30.3)	8.883	0.064
Twice daily	28 (23.5)	25 (21.0)	53 (44.5)		
More than 2 times	4 (3.4)	11 (9.2)	15 (12.6)		
After every meal	1 (0.8)	3 (2.5)	4 (3.4)		
Less frequently	9 (7.6)	2 (1.7)	11 (9.2)		
What is the most reason for not brushing teeth?					
Bother me too much	6 (5.0)	8 (6.7)	14 (11.8)	2.057	0.841
No time for brushing	11 (9.2)	14 (11.8)	25 (21.0)		
Useless, good teeth are hereditary	2 (1.7)	2 (1.7)	4 (3.4)		
Gums are bleeding when brushing	5 (4.2)	2 (1.7)	7 (5.9)		
I don't know any benefits from brushing	1 (0.8)	1 (0.8)	2 (1.7)		
Sometimes I forget to brush my teeth	35 (29.4)	32 (26.9)	67 (56.3)		
What kind of toothbrush do you use?					
Hard	3 (2.5)	3 (2.5)	6 (5.0)	2.020	0.568
Medium	26 (21.8)	33 (27.7)	59 (49.6)		
Soft	18 (15.1)	13 (1.9)	31 (26.1)		
I do not know	13 (10.9)	10 (8.4)	23 (19.3)		
In addition to toothbrush and toothpaste, what do you use or do? (You can mark more than one option)					
Dental floss	14 (23.3)	16 (27.1)	30 (25.2)	6.071	0.194
Mouthwash	24 (40.0)	25 (42.4)	49 (41.2)		
Tongue cleaner	9 (15.0)	20 (33.9)	29 (24.4)		
Rinse with water after eating	34 (56.7)	34 (57.6)	68 (57.1)		
None	0 (0.0)	0 (0.00)	0 (0.0)		
How often do you change your toothbrush?					
1-3 months	0 (0.0)	0 (0.0)	0 (0.0)	0.763	0.683
3-6 months	33 (27.7)	37 (31.1)	70 (58.8)		
Can't decide	19 (16.0)	16 (13.4)	35 (29.4)		
When it is spoilt	8 (6.7)	6 (5.0)	14 (11.8)		
How frequently do you eat sweets (including sugared coffee, tea or drink)?					
Daily					
Once in a week	38 (31.9)	50 (42.0)	88 (73.9)	7.447	0.024*
Occasionally	7 (5.9)	4 (3.4)	11 (9.2)		
Never	15 (12.6)	5 (4.2)	20 (16.8)		
	0 (0.0)	0 (0.0)	0 (0.0)		
How frequently do you smoke cigarettes or bubbly?					
Daily	11 (9.2)	0 (0.0)	11 (9.2)	19.701	0.000*
Once in a week	0 (0.0)	0 (0.0)	0 (0.0)		
Occasionally	10 (8.4)	2 (1.7)	12 (10.1)		
Never	39 (32.8)	57 (47.9)	96 (80.7)		
When was your last dental visit?					
Last 6 months	21 (17.6)	20 (16.8)	41 (34.5)	1.329	0.856
Last year	12 (10.1)	13 (10.9)	25 (21.0)		
Last two years	18 (15.1)	15 (12.6)	33 (27.7)		
More than two years	8 (6.7)	8 (6.7)	16 (13.4)		
Never	1 (0.8)	3 (2.5)	4 (3.4)		
What was the reason for your last dental visit?					
I never visited a dentist	1 (0.8)	5 (4.2)	6 (5.0)	11.836	0.066
Check up	12 (10.1)	19 (16.0)	31 (26.1)		
Scaling	7 (5.9)	4 (3.4)	11 (9.2)		
Pain	27 (22.7)	27 (22.7)	54 (45.4)		
Problem with my wisdom tooth	7 (5.9)	2 (1.7)	9 (7.6)		
Filling	4 (3.4)	0 (0.0)	4 (3.4)		
Braces	2 (1.7)	2 (1.7)	4 (3.4)		

Items	Male N(%)	Female N(%)	Total N(%)	Chi-square	P value
What is the most reason for not visiting the dentist?					
There is no time	18 (15.1)	25 (21.0)	43 (36.1)	9.841	0.080
There is no pain	31 (26.1)	24 (20.2)	55 (46.2)		
I am afraid from the dentist	4 (3.4)	7 (5.9)	11 (9.2)		
Costing	3 (2.5)	1 (0.8)	4 (3.4)		
Crowding	0 (0.0)	2 (1.7)	2 (1.7)		
I think I don't need	4 (2.5)	0 (0.0)	4 (3.4)		
If you have signs of tooth caries what do you do?					
Don't care if no pain	17 (14.3)	14 (11.8)	31 (26.1)	2.345	0.885
Take pills for pain relief	4 (3.4)	2 (1.7)	6 (5.0)		
Just try to cope with problem	3 (2.5)	3 (2.5)	6 (5.0)		
Go and see a dentist only when in pain	16 (13.4)	17 (14.3)	33 (27.7)		
Go and see a dentist immediately for filling	16 (13.4)	15 (12.6)	31 (26.1)		
Go and see a dentist for extraction of tooth	1 (0.8)	2 (1.7)	3 (2.5)		
Brush teeth more often when having pain	3 (2.5)	6 (5.0)	9 (7.6)		
Total	60 (50.4)	59 (49.6)	119 (100.0)		

In the present study, the percentage of medical students recognizing the number of permanent teeth was acceptable (71.4%), on the contrary, Kakkad et al. [11] reported that his participants responded correctly to that question with higher percentage (90.60%).

In this study, 89.9% of medical students responded correctly to the question about the cause of dental caries. Similar result was obtained by Håkansson et al. [13] among nursing students. However one unexpected answer was reported by one male student who chose fluoride as the cause of dental caries; maybe he didn't have a background about fluoride, as oral health is not included in our schools. Wyne et al. [15] found that less than one third of secondary school children knew that fluoride prevents caries.

The knowledge of females was generally better than males in many aspects, the notice of dental caries was statistically significant (P = 0.012), also, the knowledge regarding the cause of dental caries was statistically significant (P = 0.024).

There were some unsatisfactory responses regarding oral health knowledge; about one-third of students didn't know that dental plaque is the cause of gingivitis (36.1%), the result was statistically significant between males and females (P = 0.023). Similarly, only 45% of nursing students were aware about dental plaque as reported by Kaira et al. [16].

Females showed better oral health knowledge than males did, which could be explained by the fact that females are more concerned about their appearance and thus are more attentive to oral health care aspects.

Regarding the study of oral health care 58.8% of the study sample stated that it is not included as part of their education, although that it is well known that studying medicine includes overall body organs including oral structure which was proven by responses of other students who answered yes to that question. Additionally only 59.7% stated that oral diseases are related to some systemic diseases. Whereas (75.6%) of nursing students of Håkansson et al. [13] mentioned multiple systemic diseases related to oral diseases.

Concerning the question of disease imposing risk of infection transmission for dentist, a low percentage (45.5%) of medical students answered that question correctly with females higher than males, 28.6% and 16.8% respectively (P = 0.036). On the contrary, Ibrahim et al. [17], reported that 92% of medical students were aware about hepatitis B infection transmission risk to dentists. A higher percentage of correct responses were expected among our study sample in aspects related to systemic disease and oral health and disease transmission to dentist, which can partly be explained by that medical students put more emphasis on management of systemic diseases not their relation or impact on oral health.

In this study, the oral health attitude of medical students was satisfactory except attitude about tooth loss which was reported by them as normal (47.9%). Nearly similar result was reported by Farsi et al. [18] where 49.8% of students agreed that tooth loss is natural.

Only 3.4% of medical students brushed their teeth after every meal, and nearly half of the students brushed their teeth twice daily. Comparable result was reported by Emmanuel et al. [19] where only 1% of students brushed four times a day. On the contrary Wyne et al. [15] reported that his students brush their teeth after every meal with a higher percentage (60.5%). Another study reported that most of medical students brushed their teeth twice daily Bashiru et el. [20].

Regarding oral hygiene measures used by the study sample, 26.1% of students use soft bristle tooth brush, Kakkad et al. [11] reported that engineering university students use soft bristle with nearly similar percentage (33.40%). Also, 55.7% rinse with water after eating; this result is near to that reported by Kakkad et al. [11] (61.0%). The percent of students using dental floss in our study (31.1%) was better than Kakkad et al. [11] where only (6.0%) of his sample used dental floss. Contrary to our results, 68.7% of pre-university students didn't use to rinse with water after eating [21].

Sweet consumption was higher in females in the current study, where (42.0%) of females consumed sweets and males (31.9%), this difference was statistically significant (P = 0.024). This finding may be related to that females in our culture eat sweets more with hot drinks as Arabian coffee, and consumption increases during stress, which is not a common practice in males. The same results were noticed in oral health practices in relation to educational level (P = 0.046) the higher was for seniors, where the final years have more clinical requirements of graduation and have difficulty in managing their time which poses more stress on them. In contrary to Carneiro et al. [22] who found that daily sugar consumption was (91.3%) among secondary school children, while males consumed sugar higher than females (P < 0.05).

Only two (3.4%) females reported that they smoke occasionally compared to 11 (18.3%) males who smoke daily and 10 (16.7%) males smoke occasionally. This finding is logical due to cultural background where smoking is common among males only (P = 0.000).

Dental visits were low among the study sample where 34.5% of medical students visited the dentist in last 6 months. The percentage reported by Usman et al. [23] among medical students in Mangalore was lower than the current study (14.7%). Considering the study course of medical students the free time available for them is limited which affects the rate of dental visits.

The reason for visiting the dentist was mostly pain (45.4%), also the most common reason for not visiting the dentist was no pain (46.2%). Nearly similar result was noted by Baseer et al. [20] where 60% of medical students reported that tooth ache was the driving factor for their last visit to the dentist. On the contrary, Nirmala et al. [24] reported that his study sample medical, dental and paramedical students responded with higher percentage (91%) to a similar question. In addition Lian et al. [25] found that dental pain is not a common reason for dental visit among secondary school children, only (26.8%) of his students visit the dentists for pain. Differences in results can be attributed to differences in study samples and cultural background. However it is a common practice among patients to postpone visiting the dentist unless they suffer from pain.

5. LIMITATIONS OF THE STUDY

The limitations of the present study include low number of comparable studies in the literature.

The results of the present study depend on self-reported data which may be biased through over- or underreporting of the subjects.

There is difficulty in motivating medical students to respond to questionnaires, it takes time, they are under stress due to multiple exams and clinical practices so their response rate is usually low.

6. CONCLUSION

This study revealed an integral overview of oral health knowledge, attitude and practices among medical students attending Medical College, Taibah University in Al- Madinah ,KSA. Overall health knowledge was fair, concerning attitude the overall results were good, while oral health practices were moderate.

7. RECOMMENDATIONS

The doctors have a strong effect on community they need more effort to know about oral health generally. So, aspects of oral health should be included in their studying programs. This will improve their knowledge and behavior, and make them a good model to their patients and community.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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