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Original Article

Assessment of oral hygiene behavior among Iraqi medical students

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ABSTRACT

Objectives: General health is intimately related to oral health. Since primary care doctors are the main healthcare providers in society and many systemic disorders present themselves orally, it is imperative that medical students and professionals comprehend oral health and its importance. The study's aims were to determine the comprehension of oral hygiene practices and brushing teeth strategies among a sample of Iraqi medical graduates.

Material and Methods: A cross-sectional study involved 100 medical undergraduates at Ibn Sina University, College of Medicine in Baghdad, Iraq, during the period from (September to November 2022) after obtaining informed approval.

Results: Our participants were 57.0% male and 43.0% female, ranging in age from 20 to 24 years old, the majority of students (82.0%) brush their teeth daily, but (18.0%) they did not, regarding toothbrushing techniques, the majority (34.0%) use a combined (horizontal and vertical) technique, (29.0%) vertical, (17.0%) horizontal, and (20.0%) circular, regarding time spent on brushing teeth, 47.0% taking 1 min, 29.0% taking between 2 and 3 min, 18.0% taking less than a minute, and 6.0% taking more than 4 min, and (52.0%) of students use a medium brush, while (31.0%) use a soft brush, and (5.0%) use a hard brush, the remaining (12.0%) not knowing the type of brush they employ, the dental floss was known to (65.0%) of participants, while 35.0% were unaware of its existence, there was no significant correlation between regularity of brushing and the number of visits to the dentist for scaling ($P > 0.05$).

Conclusion: It would be valuable for medical graduates to attend educational society gatherings and continued dental training courses to increase their understanding of their oral hygiene.

Keywords: Oral health, Brushing methods, Dental floss, Type of bristle, Medical students

INTRODUCTION

A healthy mouth is essential to general health and has a significant impact on overall well-being.^[1-3] Understanding the importance of oral hygiene is essential to maintaining skilled oral health; however, having poor dental hygiene still places a heavy strain on people.^[2]

In 2016, the Federal Dental International reinterpreted oral health thoroughly, acknowledging that it was diverse and affected the capacity to perceive sense of smell, taste, touch, chew, smile, swallow, converse, and express a variety of feelings through expressions of face with assurance and free from pain, discomfort, and craniofacial disease.^[4]

Two of the most prevalent problems are dental cavities and gum disease, both of which can be prevented by practicing good dental hygiene. Using dental floss with good brushing can help avoid these illnesses.^[5]

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Techniques for brushing the teeth can be horizontal, vertical, both horizontal and vertical combined, or rotating. A hard-bristle toothbrush used improperly or aggressively can cause gingival recess and cervical erosion, both of which are harmful to the health of the mouth.^[6]

Research suggests that while periodontal health is acknowledged as a crucial component of general well-being, it is frequently ignored as a crucial element of numerous interprofessional coordinated approaches to treatment. Medical doctors' perceptions of the potential link between oral and general health have been the focus of numerous knowledge, attitude, and practice inquiries in the past.^[7,8]

Since physicians will be the primary health-care providers and those responsible for promoting oral health in the near future, it is essential for dental care and medical graduates to acquire a thorough knowledge of concerns regarding oral health.^[9] Therefore, it is important to assess their awareness of and behaviors for their oral hygiene.

The study's aims were to determine the comprehension of oral hygiene practices and brushing teeth strategies among a sample of Iraqi medical graduates.

MATERIAL AND METHODS

A cross-sectional study involved 100 medical undergraduates at Ibn Sina University, College of Medicine in Baghdad, Iraq, during the period from (September to November 2022) after obtaining informed approval.

The medical undergraduate students were examined intraorally thoroughly by dentists and answered an autonomous questionnaire that was used to evaluate dental hygiene practices and teeth-cleaning methods.

These were the categories of students: Students from the 1st, 2nd, and 3rd years as well as the 4th and final two years of study.

The study's data were gathered in two stages. In the initial phase, medical college students were asked to complete a self-made survey. The second stage was having students practice teeth-cleaning procedures on a model.

Version 21 of IBM's Statistical Program for the Social Science Research was used to analyze the data for describing the individual traits of the students. Statistical methods were applied and the relative significance of qualitative factors was examined using the Chi-square method (χ^2). At $P = 0.05$ or less, the results were determined to be significant.

RESULTS

One hundred participants made up the sample. All were medical graduates at Ibn Sina University of Medical and Pharmaceutical Sciences. The majority of the respondents, 57.0 %, were male and 43.0% were female.

Our participants ranged in age from 20 to 21 years old (51.0%), 22–23 years old (24.0%), 18–19 years old (23.0%), and 24 years old (2.0%).

Most of those surveyed (33.0%) were in the third stage, followed by the second stage (30.0%), the fifth stage (19.0%), the fourth stage (15.0%), and the sixth stage (2.0%) of the responses.

The regularity of brushing does not statistically significantly correlate with the number of visits to the dentist for scaling ($P > 0.05$) [Table 1].

Frequency of brushing on a daily basis among the participants is shown in Figure 1. The majority of the students (82.0%) brush their teeth daily, but 18.0% do not.

The students' toothbrushing techniques are shown in Table 2. Among the responses, the majority (34.0%) had been combined, 29.0% had been vertical, the remaining 20.0% had been circular, and 17.0% were horizontal.

The study we conducted reveals how long students spent brushing their teeth, with 47.0% taking 1 minute, 29.0% taking between 2 and 3 minutes, 18.0% taking less than a minute, and 6.0% taking more than 4 minutes.

In addition, our study reveals the various kinds of toothbrushes that participants use. The majority of participants (52.0%) indicated that they use a medium brush, while 31.0% indicated that they use a soft brush, and 5.0% indicated that they use a hard brush, with the remaining (12.0%) not knowing the type of brush they employ.

The graph below [Figure 2] illustrates whether the students utilize any kind of interdental assistance. The majority (52.0%) indicate that they do not, while 30.0% indicate that they do so occasionally, and 18.0% indicate that they do so regularly.

The dental floss was known to (65.0%) of participants, while 35.0% were unaware of its existence [Figure 3].

DISCUSSION

Maintaining oral hygiene and minimizing the risk of dental decay and periodontal disorders are both possible with regular toothbrushing.^[10]

Higher education students are thought to be especially best to understand the importance of keeping proper dental hygiene.

The degree of oral hygiene awareness is lower in non-medical educational institutions than that found in medical universities according to research on Saudi Arabia's student populations. In addition, a study has demonstrated an association between age (>22 years vs. ≤22 years) and

Table 1: The association between the frequency of brushing and the dentist visit for scaling.

Frequency of the dentist visit for scaling	Frequency of brushing				Total	P-value Chi-square test
	Twice a day regularly	Once a day regularly	Once or twice irregularly	Sometimes		
Every 3 months	4 57.1%	1 14.3%	0 0.0%	2 28.6%	7 100.0%	0.619
Once a year	11 32.4%	9 26.5%	7 20.6%	7 20.6%	34 100.0%	
Every 6 months	5 33.3%	7 46.7%	2 13.3%	1 6.7%	15 100.0%	
Never	17 38.6%	14 31.8%	8 18.2%	5 11.4%	44 100.0%	
Total	37 37.0%	31 31.0%	17 17.0%	15 15.0%	100 100.0%	

Table 2: The brushing methods of the students.

	n	Percentage
Circular	20	20.0
Vertical	29	29.0
Horizontal	17	17.0
Combined	34	34.0
Total	100	100.0

knowledge levels.^[11] Accordingly, the present study found that 3rd stage medical students (about 20 years old) comprise 33.0% of total medical students [Table 3].

Based on the findings of Kakkad *et al.*^[12] and Peltzer and Pengpid's^[13] studies, more than half (67%) of medical students brushed their teeth twice a day; students involved in the present study include only 30% who consistently brushed their teeth twice a day regularly. The Indian study conducted by Arun *et al.*^[14] found that 30.3% of medical students brush their teeth once daily and this is in line with the present study's findings that 31% of the students brush their teeth once a day regularly. This may be due to a busy schedule or lack of dental knowledge that oral health might be neglected [Table 1].^[12]

There is not much research on the effectiveness of various manual brushing techniques^[15] Research by Salman *et al.* 2021^[16] revealed in their study that women outperformed men in terms of results for brushing techniques both horizontal and vertical, and this aligns with the findings of the present research that combined vertical and horizontal methods comprise 34%, a higher proportion of all brushing techniques [Table 2].

In regard to brushing time, Table 4 shows that 47% of medical students brushed their teeth in 1 minute, while a study carried out by Janatolmakan *et al.*^[17] found that 47.5% of medical students understand that brushing takes roughly 2–3 minutes.

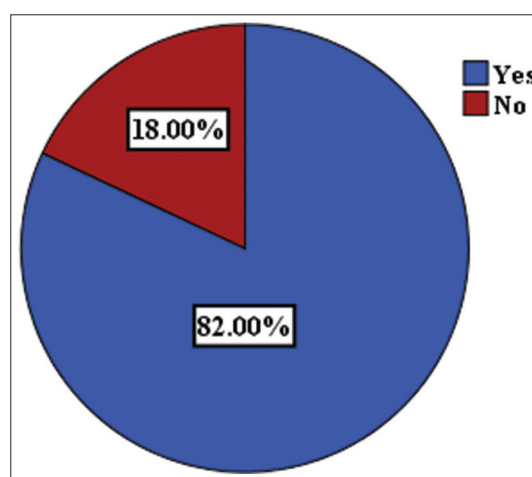


Figure 1: Frequency of brushing on a daily basis.

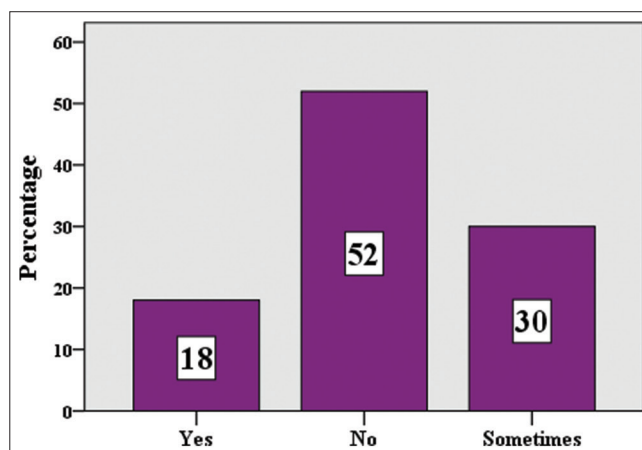


Figure 2: Application of interdental aids.

In this study, 52% of students used medium toothbrushes type [Table 5]. Another two studies performed in other regions of the world found that 58% of medical school graduates in Manipal^[18] and 66% of medical officers of

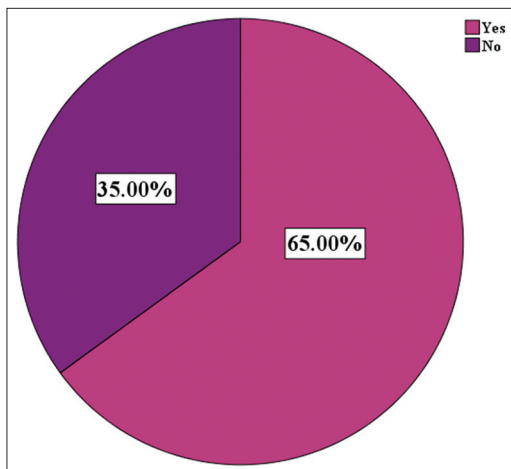


Figure 3: Knowledge about dental floss.

Table 3: Demographic characteristics of medical students.

Variables	n=100	Percentage
Gender		
Male	57	57.0
Female	43	43.0
Age		
18–19	23	23.0
20–21	51	51.0
22–23	24	24.0
24	2	2.0
Stage		
First stage	1	1.0
Second stage	30	30.0
Third stage	33	33.0
Fourth stage	15	15.0
Fifth stage	19	19.0
Sixth stage	2	2.0

Table 4: The time spend on brushing teeth.

	n	Percentage
<1-min	18	18.0
1-min	47	47.0
2–3 min	29	29.0
>4-min	6	6.0
Total	100	100.0

Table 5: The type of tooth brush bristle used by the students.

	n	Percentage
Soft	31	31.0
Medium	52	52.0
Hard	5	5.0
Don't know	12	12.0
Total	100	100.0

Nigeria^[19] used medium brushes. A survey conducted in Madinah, Saudi Arabia^[20] found that 26.1% of students use soft bristle toothbrushes, while in the current research, 31% of respondents utilize soft bristle type brushes.

Dental floss is an effective tool for cleaning between teeth.^[21] In the present study, around 18% of students flossed regularly [Figure 2]. This is consistent with Gupta's^[22] research that indicates about 13.1% of medical graduates use tooth floss. In a research conducted in Riyadh,^[23] fewer than 50% of health workers utilized mouth rinsing and flossing for cleaning teeth. According to a study performed by Al Subait *et al.*,^[24] over 50% of health-care students were knowledgeable about the importance of flossing and brushing.

The present analysis found that 65% of participants were conscious of using floss for teeth [Figure 3]. This suggests that a certain level of knowledge about dental floss may not fully predict oral health practices.^[25] However, other research suggests that floss for dental use is not commonly widespread.^[26]

Limitations

The self-identified nature of the survey may have resulted in excessive reporting of oral health practices, limiting the study's scope. Psychological and economic issues were not taken into account in this study.

CONCLUSION

Medical graduates may have improved oral health due to their greater understanding and status in society. Awareness and comprehension of oral health are crucial for providing timely and preventative care to people in need, and it would also be valuable for medical graduates to attend educational society gatherings and continued dental training courses to increase their understanding of their oral hygiene.

Ethical approval

The Institutional Review Board approval is not required as this is a cross-sectional study.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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