

Assessment of Oral Health Knowledge, Behavior and Attitude of Dental Technology and Public Health Students at Medical Technology Faculty- Msallata

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● Received: 15/12/2023.

● Accepted: 30/01/2024

■ Abstract:

There are some reports about oral health knowledge and behaviour of dental students or medical students in other countries. However, in Libya, it is rare to find a study conducting medical students. Hence, the present study was done to assess the oral knowledge, behaviour and attitude of dental and public health students at the medical technology faculty in Msallata city, to provide basic data for oral health education, especially for dental and medical students.

A descriptive cross-sectional study involved 87 students of dental and public health departments. The collected data was analysed using Statistical Package for social science (SPSS) version 26. This study revealed good oral health knowledge and attitude among both studied groups, however, the behaviour was poor. Females had better knowledge and behaviour than males, however, males have a higher attitude but not statistically significant. For recommendation, we suggest that oral health awareness should be increased among medical technology students, as they are future health professionals. For this goal, we offer oral health and preventive topics related to dental and oral health should be stressed in their curriculum. We also recommend public health strategies such as community water fluoridation as well as school oral health programs which help students to be aware of their mouths.

● **Key Words:** Oral health; dental technology; public health, SPSS analysis.

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■ المستخلص:

هناك الكثير من التقارير عن صحة الفم لطلبة الأسنان و المختصين في المجال الطبي في الدول الأخرى. إلا إنه من النادر وجودها في ليبيا. ولذلك كان الهدف من هذه الدراسة هو تقييم معرفة و سلوك و موقف طلبة الأسنان و الصحة العامة في كلية التقنية الطبية بمدينة مسلاتة التابعة لجامعة المرقب لتزويد قاعدة بيانات عن ثقافة صحة الفم وخصوصا لطلبة الأسنان و المختصين في المجال الطبي.

تضمن هذا البحث دراسة وصفية شملت 87 طالبا في قسمي تقنية الأسنان و الصحة العامة وقد تم تحليل البيانات باستخدام برنامج SPSS نسخة 26. نتجت هذه الدراسة عن مستوى جيد للمعرفة و الموقف بين طلبة القسمين إلا إن السلوك كان ضعيفا. المعرفة و السلوك لدى الإناث كان أفضل من الذكور الذي كان موقفهم أعلى.

للتوصيات نقتح زيادة الوعي بصحة الفم لدى طلبة التقنيات الطبية كمختصين في المجال الصحي مستقبلا و لهذا الغرض ننصح بتقديم مواضيع مكثفة عن الوقاية و صحة الفم في المنهاج الدراسي للطلاب. أيضا نوصي باستراتيجيات لصحة المجتمع مثل برنامج فلورة المياه و برامج توعية طلاب المدارس بصحة الفم.

● الكلمات المفتاحية: صحة الفم، تقنية الأسنان، الصحة العامة، برنامج SPSS.

■ Introduction

Oral diseases are still one kind of the most prevalent problems that affect the overall health of human beings (Nakre *et al.*, 2013). Periodontitis and dental caries, as two major oral problems, affect 60 and 36% of people worldwide, respectively (Kassebaum *et al.*, 2015).

Given the importance of oral health in the whole body and the high prevalence of oral diseases, the joint effort of dentists and clinicians is essential to people's health, and it should be integrated as a part of comprehensive health promotion (Baseer *et al.*,2012). In addition, the knowledge and behaviour of oral health professionals reflect their understanding of oral preventive measures and practices, which have a great impact on their delivery of oral health care and then affect the oral health of patients (Ahamed *et al.*,2015). Therefore, dental and medical students need to have good oral health awareness as they will be the major providers of health services and be responsible for public oral health promotion in the future.

There are some reports about oral health knowledge and behaviour of dental students or medical students in other countries. However, in Libya, it is rare to find a study conducting medical students. Hence, the present study was done to assess the oral knowledge, behaviour and attitude of dental and public health students at the medical technology faculty, to provide basic data for oral health education especially of dental and medical students.

II. Material And Methods

1. study design:

The survey was conducted as cross sectional study.

2.study area and study population:

The studied population were dental technology and public health students at medical technology faculty, Elmergib university .

3. Study duration:

This survey was conducted in December 2021 and January 2022.

4. Sample size:

The total sample size was 87 students.

5. Data collection:

The questionnaire was adopted from a previous study (Ahamed *et al.* 2015). It was constructed in English translated to Arabic. A total of 28 questions were designed to evaluate the oral health knowledge, attitude and behavior of students among dental technology and public health students. The questionnaire was in the format multiple choice questions and yes/no type questions. The students were told to pick up only one answer for each question.

7.Data analysis:

The Statistical Package for social science (SPSS ,version 26) was used to analyze the data. Descriptive statistics was used for all variables. Values was expressed as frequencies and percentage. Chi- square test was used to assess the relation between gender and oral health knowledge, behavior and attitude.

8. Ethical approval:

To conduct this study, a written permission was obtained from the head of dental technology department at the faculty.

III. Results

-Gender

As shown in table 1, the total studied subjects consisted of 87 dental technology and public health students at medical technology faculty, Elmergib University. There were 36 (41.4%) males and 51(58.6%) females students.

Table 1- The percentage of males and females students:

Gender	Frequency	%Percent
Males	36	41.4
Females	51	58.6
Total	87	100.0

-Questionnaire response:

The total number of the students was 87, dental technology were 55 students (63.2%), while public health students were 32(36.8%) as in (Figure 1).

The questionnaire consisted of 28 questions that evaluate the knowledge, behaviour and attitude of the students, they were 10 knowledge questions, 13 behavior questions and 5 attitude questions.

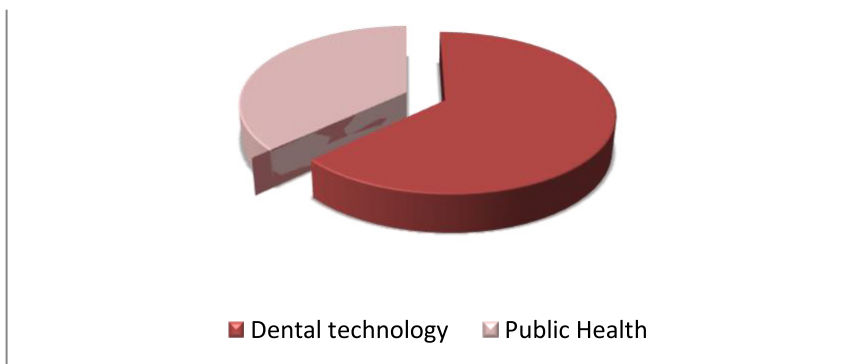


Figure 1. The percentage of dental technology students to Public health students

Table 2 below describes the responses of all the studied students to the questionnaire. For the knowledge questions, the majority of the students answered correctly about the number of dentition sets in life, know the meaning of plaque, gingival bleeding indicates gingivitis, sweets leads to decay, smoking causes oral cancer and oral health related to general health. Only 25.3 know the importance of fluoride in the prevention of dental caries.

Regarding behaviour questions, most of the students use tooth brush and toothpaste as their ideal tool for cleaning and brushing their teeth at least twice a day. 42.5% brush their teeth in the morning, before going to bed and after eating sweets. 48.3% have gingival bleeding while brushing. Only 33.3% are smokers.35.6% have bad breathing and 52.9% visit the dentist when they have a toothache (Table 2).

In the attitude questions, most of the studied group agreed that the dentist should be visited regularly, smoking is a bad habit and the missing teeth should be replaced (Table 2).

Table 2- Response of all students to the questionnaire:

Knowledge questions	Choices	frequency	Percent%
Number of dentition sets in life of an individual:	1	47	54.0
	2	5	5.8
	3	13	14.9
	Don't know	22	25.3
	Total	87	100.0
Total number of deciduous and permanent teeth:	5and25	50	57.5
	20and32	16	18.4
	32and32	14	16.1
	Don't know	7	8.0
	Total	87	100.0

Knowledge questions	Choices	frequency	Percent%
Main purpose of tooth brushing:	Prevention of tooth decay and gum disease.	65	74.7
	Achievement of cleaner and brighter teeth.	11	12.6
	To remove stains on teeth.	6	6.9
	Don't know.	5	5.8
	Total	87	100.0
Meaning of dental plaque:	Discoloration of teeth	19	21.8
	Soft deposits on teeth	52	59.8
	White patches on teeth	8	9.2
	Don't know	8	9.2
	Total	87	100.0
Meaning of gum bleeding:	Gum disease (inflammation of gums)	66	75.9
	Infection of tooth	10	11.5
	Calcium deficiency	9	10.3
	Don't know	2	2.3
	Total	87	100.0
Effect of retention of sweet food on teeth:	Can lead to decaying of teeth	70	80.5
	Calcium deficiency	10	11.5
	Leads to bleeding gums	6	6.9
	Don't know	1	1.1
	Total	87	100.0
Effects of fluorides on teeth:	Prevention of gum disease	22	25.3
	Prevention of tooth decay	13	14.9
	Cleaning of teeth	32	36.8
	Don't know	20	23.0
	Total	87	100.0

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Knowledge questions	Choices	frequency	Percent%
Can health of teeth and mouth affect health of body:	Yes	57	65.5
	No	12	13.8
	Don't know	18	20.7
	Total	87	100.0
Reasons of oral cancer:	Calcium deficiency	49	56.3
	Smoking	13	14.9
	Vitamin C deficiency	5	5.7
	Don't know	20	23.0
	Total	87	100.0
Is it possible to correct irregularly placed teeth?	Yes	70	80.5
	No	7	8.0
	Don't know	10	11.5
	Total	87	100.0
Behavior questions	choices	frequency	Percent%
Brushing of teeth:	Yes	66	75.9
	No	11	12.6
	Don't know	10	11.5
	Total	87	100.0
Minimum brushing habit:	Once a day	9	10.4
	Twice a day	51	58.6
	Trice a day	27	31.0
	Total	87	100.0

Knowledge questions	Choices	frequency	Percent%
When you rinse your mouth	In the morning	15	17.2
	In the morning and before going to bed	35	40.2
	In morning, before going to bed and after eating sweet foods	37	42.5
	Total	87	100.0
Ideal brushing material	Tooth paste and finger	60	69.0
	Tooth paste and brush	19	21.8
	Don't know	8	9.2
	Total	87	100.0
Brush each your teeth carefully	Yes	73	83.9
	No	14	16.1
	Total	87	100.0
Cleaning of tongue	Yes	60	69.0
	No	27	31.0
	Total	87	100.0
Use of oral hygiene aids like dental floss and mouth wash	Yes	52	59.8
	No	35	40.2
	Total	87	100.0
Smoking habit	Yes	58	66.7
	No	29	33.3
	Total	87	100.0
Bleeding from gums while brushing teeth:	Yes	45	51.7
	No	42	48.3
	Total	87	100.0

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Knowledge questions	Choices	frequency	Percent%
Noticed anytime – white sticky deposits on teeth	Yes	49	56.3
	No	38	43.7
	Total	87	100.0
Presence of bad breath:	Yes	56	64.4
	No	31	35.6
	Total	87	100.0
Visit to dentist only after having toothache	Yes	41	47.1
	No	46	52.9
	Total	87	100.0
Use of dye to check cleaning of teeth	Yes	46	52.9
	No	41	47.1
	Total	87	100.0
Attitude questions	choices	frequency	percent
Dentists should be visited regularly?	Yes	70	80.5
	No	17	19.5
	Total	87	100.0
tobacco chewing is a bad habit?	Yes	63	72.4
	No	24	27.6
	Total	87	100.0
Well cleaning of teeth can be done without using toothpaste	Yes	43	49.4
	No	44	50.6
	Total	87	100.0

Knowledge questions	Choices	frequency	Percent%
Hardness of bristles of teeth has any effect on teeth and gums?	Yes	59	67.8
	No	28	32.2
	Total	87	100.0
Immediate replacement of missing teeth by artificial teeth is necessary	Yes	68	78.2
	No	19	21.8
	Total	87	100.0
Dentists plays role only in treatment part and not in the prevention?	Yes	70	80.5
	No	17	19.5
	Total	87	100.0

-Evaluation of oral health knowledge, behavior and attitude:

In table 3, 78.2% of all the participating students have good oral health knowledge, while 21.8% were poor. However the behavior was significantly poor (94.3%), and only 5.7% of all the students showed good behaviour. Students who showed good attitudes were higher than those who showed poor attitudes, which were 51.7% and 48.3% respectively.

Table 3-Oral health knowledge, behavior and attitude among all the studied population:

Question area	Criteria	Frequency	percentage %
knowledge	Good	68	78.2
	Poor	19	21.8
	Total	87	100.0
behavior	Good	5	5.7
	Poor	82	94.3
	Total	87	100.0
attitude	Good	45	51.7
	Poor	42	48.3
	Total	87	100.0

Dental technology students show high oral health knowledge (96.4%) compared to public health students who showed only 46.9%, while poor knowledge was 3.6% and 53.1% respectively as described in (Table 4).

The vast majority of both studied groups showed poor behaviour which was 94.5% and 93.7% for dental technology and public health respectively (Table 4).

The oral health attitude of dental technology students was better than public health students, which revealed 54.6% for dental technology students and 46.9% for public health students. However, 45.4% of dental technology and 53.1% of public health students showed poor attitudes which is a bit high regarding medical technology students.

Table 4-Oral health knowledge, behavior and attitude of dental technology and public health students :

Question area	criteria	Dental technology		Public health	
		Frequency	Percentage	Frequency	Percentage
knowledge	Good	53	96.4	15	46.9
	Poor	2	3.6	17	53.1
	Total	55	100.0	32	100.0
behavior	Good	3	5.5	2	6.3
	Poor	52	94.5	30	93.7
	Total	55	100.0	32	100.0
attitude	Good	30	54.6	15	46.9
	Poor	25	45.4	17	53.1
	Total	55	100.0	32	100.0

Oral health knowledge, behaviour and attitude between males and females has been also assessed in our study to know the correlation between gender and the range of knowledge, behaviour and attitude. The result as described in table 5, revealed that females showed higher oral health knowledge (84.3%) compared to males who showed 69.4%. The P-value was 0.098, which was more than 0.05, that there weren't statistically significant differences between gender and oral health knowledge.

For the oral health behaviour, the findings showed very high poor behaviour among males (100%) and females (90.2%). Good behaviour was showed 0% and 9.8% for males and females respectively. The P-value was 0.053, which was more than 0.05, that there weren't statistically significant differences between gender and oral health behaviour.

In table 5, the oral health attitude was good for 55.6% of males which is a bit higher than females who revealed 49%, however, 44.4% of males showed poor attitude and for females was 51%. The P-value was here 0.054 which is more than 0.05, which also results no statistically significant differences between gender and oral health attitude.

**Table .5 -Chi-square test to determine the relation between gender and oral health
knowledge, behavior and attitude:**

Question area	crite- ria	Males		females		P- value
		Frequency	Percentage	Frequency	Percentage	
knowledge	Good	25	69.4	43	84.3	0.098
	Poor	11	30.6	8	15.7	
	Total	36	100.0	51	100.0	
behavior	Good	0	0	5	9.8	0.053
	Poor	36	100	46	90.2	
	Total	36	100.0	51	100.0	
Attitude	Good	20	55.6	25	49	0.548
	Poor	16	44.4	26	51	
	Total	36	100.0	51	100.0	

■ Discussion:

Many studies have shown conflicting results on oral health knowledge, attitude and behavior among health professionals as they are future practitioners (Ahamed *et. al*, 2015). In this study, we focused on two important health fields: dental technology and public health students.

The results revealed that 96.4% of dental technology students have good oral knowledge, while public health students showed only 46.9%. This vari-

ability could be explained by the fact that dental technology students have gained moreoral and dentalhealth background in their curriculum. This result agrees with a previous study in China, which found that dental students have better knowledge than other medical students (Yao *et. al.*,2019). Overall, 75.9% of dental technology and public health students said that gingival bleeding indicates gingivitiswhich is similar to a Saudi study (Baseer, *et al.*2012), 59.8% of them said that dental plaque refers to a soft deposit which is higher than the results of doctors in Baseer et, al. study. The majority of dental technology and public health students agree that oral health is related to general body health (65.5%). This finding is similar to that in the Baseer et, al study on technicians.

Females showed higher oral knowledge as compared to males, but the difference was not statistically significant. Our result similar to that reported by Baseer et al.(Baseer *et, al.*2012) ,Khami et, al.(Khami et, al.2007) and Ahammed et,al. (Ahamed *et, al.*,2015), and in contrast with some previous studies in Jordan (Alomari and hamasha ,2005) and Croatia (Pillizer *et, al.*2007), which showed significantly higher oral health knowledge among females compared with males.

Students in both fields had a high percentage of poor behaviour. This result might be due to the lack of emphasis on oral health care during all pre-university education stages. In a study by Alsharif and his colleagues in Libya on 340 schoolchildren showed that only 33.5% were brushing twice a day, and 52.4% of the students never visit the dentist and 63.5% of the students have dental caries (Alsharif et, al.,2021). Also, another earlier Libyan study found that the prevalence of dental caries among first-grade students was 78% and seventh-grade was 48.2% (alraqiq et. al.,2021). These studies also indicate that oral health programs in schools have been ignored.

69% of our study groups clean their teeth with tooth brush and tooth paste which is lower than previous studies by Baseer et, al(Baseer et, al.2012)., and Maatouk *et al.* (Maatouk *et al.*,2006). And 52.9% visit the dentist only when they have a toothache, this result is a bit higher than a study on dental students in Jordan that reported 50% (Alomari and Hamasha,2005) and 30.3% reported in a study in India (Sharda and shetty,2010). Most of the

studied subjects are not smokers which is a good indicator. Surprisingly, no males showed good behaviour while females showed only 9.8%.

Generally, most of the studied group showed good attitudes, however, dental technology students have better attitudes than public health students. 80.5 % of our studied group said that visiting the dentist regularly is important, this result is lower than the results reported by Baseer et, al.(Baseer *et, al.*2012). The majority of our studied subjects believe that smoking is a bad habit. Males showed better attitudes than females but not statistically significant.

■ Conclusion and Recommendation

It might be concluded that the students of dental technology seem to have better knowledge and attitude than public health students. However, the behaviour of both in this study was so poor.

we recommend that oral health awareness should be increased among medical technology students, who are future health professionals. For this purpose, we suggest that oral health and preventive dentistry topics should be stressed in the curriculum of students. And also developing public health strategies such as community water fluoridation and dental health programs can be helpful, especially in schools.

IV. Acknowledgements

The authors would like to thank all the study participants and the staff of medical technology faculty in Msallata.

■ References

1. Nakre PD, Harikiran AG. Effectiveness of oral health education programs: a systematic review. *J Int Soc Prev Community Dent.* 2013;3(2):103–15.
2. Kassebaum NJ, Bernabe E, Dahiya M, Bhandari B, Murray CJ, Marcenes W. Global burden of untreated caries: a systematic review and metaregression. *J Dent Res.* 2015;94(5):650–8.
3. Baseer M, Alenazy M, Alasqah M, Algabbani M, Mehkari A, (2012). Oral health knowledge, attitude, and practices among health professional in king Fahad medical city, Riyadh. *Dental research journal,* 9(4),386.

4. Ahamed S, Moyin S, Punathil S, Patil NA, Kale VT, Pawar G. Evaluation of the oral health knowledge, attitude and behavior of the preclinical and clinical dental students. *J Int Oral Health* 2015;7(6):6570.
5. Yao K., Yao Y., Shen X., et al. assessment of oral health behavior, knowledge and status among dental and medical undergraduate students: a cross sectiona study. *BMC oral health* 19, 26(2019)..
6. Khami MR, Virtanem JI, Jafarian M, Murtomaa H. Prevention oriented practice of Iranian senior dental students. *Eur J DentalEduc* 2007;11:48-53.
7. Al-Omari QD, Hamasha AA. Gender-specific oral health attitudes and behavior among dental students in Jordan. *J Contemp Dent Pract* 2005;6:107-14.
8. Pellizer C, Pejda S, Spalj S, Plancak D. Unrealistic optimism and demographic influence on oral health-related behaviour and perception in adolescents in Croatia. *Acta Stomatol Croatia* 2007;41:205-15.
9. Alsharif, S.O., Eshumani, F. A., Omar, H. A., Bakoush, E. A., Saoud, E. A., &Omar, W. M. Evaluation of Dental caries and oral Hygiene among School children Aged 6 To 12 Years Old in Msallata City.
10. Alraqiq, H., Eddali, A., & Boufits, R.(2021). Prevalence of dental caries and associated factors among school aged children in Tripoli, Libya: a cross-sectional study.*BMC oral health*, 21(1), 224.
11. Maatouk F, Maatouk W, Ghedira H, Ben Mimoun S. Effect of five years of dental studies on the oral health tunisian dental students. *East Mediterr Health J* 2006;12:625-31.
12. Sharda AJ, Shetty S. A comparative study of oral healthknowledge, attitude and behaviour of non-medical, Para-medicaland medical students in Udaipur city, Rajasthan, India. *Int J DentHyg* 2010;8:101-9.