

Comparison of Oral Hygiene Practices between Dental, Medical and Allied Health Sciences Undergraduate Students of Lahore

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ABSTRACT

Aim: To determine how dental education affects the oral hygiene practices in Pakistan.

Study design: Descriptive cross-sectional study.

Place: FMH College of Medicine and Dentistry, Lahore, Pakistan.

Duration: One month.

Methodology: A self-administered questionnaire was circulated amongst BDS, MBBS, and AHS students of FMH College of Medicine and Dentistry, Lahore, Pakistan. The responses were analyzed using SPSS version 20.0.

Results: Dental students were superior to MBBS and AHS students in brushing frequency, electric toothbrush and water flosser use. Manual toothbrushes are more commonly used than electric toothbrushes in all three groups. More MBBS students believed that electric toothbrushes were better. Flossing proved unpopular. Toothpicks were the preferred interdental aid. Few students use water flossers. Mouthwashes are only used when needed. Most respondents were nonsmokers, but more BDS students smoked.

Conclusion: Conclusion: Dental education in Pakistan impacts oral hygiene habits since dental students reported to have superior oral hygiene habits. More MBBS students believed electronic toothbrushes are superior to manual ones, indicating that BDS and AHS students require knowledge of electric toothbrushes.

Keywords: Allied Health Sciences, Dental education; Dental students; Medical students; Oral hygiene practices.

INTRODUCTION

Maintaining oral hygiene is the practice of keeping the oral cavity disease free¹. The oral cavity is susceptible to many diseases that can be prevented^[2], provided individuals employ certain oral hygiene practices as habits, including brushing their teeth twice daily, flossing, and using mouthwash as prescribed by a dentist³. Unfortunately, many dental myths in Pakistan serve as a deterrent to seeking dental care⁴. Thus, to reduce the burden of oral disease and prevent them from occurring, there must be widespread awareness and implementation of proper oral hygiene practices.

To become a healthcare worker, students must be equipped with the knowledge to not only diagnose and treat but also advise patients on how to prevent diseases from occurring. Hence, it is the responsibility of healthcare workers to dispense proper healthcare advice⁵.

This study will compare the oral hygiene practices of dental students with that of medical and allied health sciences students to discover the impact of dental education on oral hygiene practices and whether obtaining this knowledge translates to integrating these practices into one's daily routine.

Through this study, we will discover the effectiveness of dental and medical education and awareness in Pakistan in changing oral health behavior since dental, medical, and allied health sciences students are given specialized knowledge regarding health and diseases. Dental students (BDS) will be compared with Medical (MBBS) and Allied Health Sciences (AHS) students since these students are the groups of healthcare workers who will be responsible for public oral health promotion in the future⁶. Previous studies have evaluated oral health knowledge and behavior of dental and medical students in other countries^{6,7,8,9,10}, but the students of Pakistan have not been studied. Hence, this study focuses on undergraduate students in Pakistan.

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MATERIALS AND METHODS

Study design: Descriptive cross-sectional study.

Place: FMH College of Medicine and Dentistry, Lahore, Pakistan.

Duration: One month upon synopsis approval.

Inclusion Criteria: Undergraduate MBBS, BDS and AHS students enrolled in FMH College of Medicine and Dentistry.

Exclusion Criteria: Postgraduate students and students not enrolled in FMH College of Medicine and Dentistry.

Data Collection Procedure: Upon consenting to participate in the study, participants were asked to fill out a questionnaire which evaluated their oral hygiene practices after approval from the Institutional Review Board (IRB # FMH-03/01/2023-IRB-1158). Responses from participants separated them into groups based on whether they are enrolled in Medical, Dental or Allied Health Sciences undergraduate degrees. The self-administered questionnaire consisted of 11 questions. The first question divided the respondents based on their undergraduate degree. The second part assessed the oral hygiene practices of the students. These questions included how many times a day the students brushed their teeth, used interdental aids and mouthwash, cleaned their tongue, used water flossers, and whether or not they smoked. The third part assessed their knowledge about oral hygiene practices and comprised of questions regarding their opinion on whether a manual or electric toothbrush is better and which interdental aid they preferred to use. 210 responses were collected, which consisted of responses from 84 MBBS students, 77 BDS students, and 49 AHS students.

Statistical analysis: The obtained data was analyzed using the SPSS software for windows version 20.0

RESULTS

Regarding brushing frequency, 77 students brushed once a day, 110 students brushed twice a day and 23 brushed thrice a day. The results have been summarized in Table 1.

Table 1: Brushing frequency * undergraduate degree cross tabulation

Brushing Frequency	Undergraduate Degree						Total
	BDS		MBBS		AHS		
	N	%	N	%	N	%	
Once a day	9	11.7	45	58.4	23	29.9	77
Twice a day	49	45.5	36	32.7	25	22.7	110
Thrice a day	19	82.6	3	13.0	1	4.3	23
Total	77		84		49		210

From the BDS students group, 11.7% brushed once daily, 63.6% brushed twice a day, and 24.7% brushed thrice daily. From the MBBS students group, 53.6% brushed once daily, 42.9% brushed twice daily, and 3.6% brushed thrice daily. From the AHS students group, 46.9% brushed once daily, 51.0% brushed twice daily, and 2.0% brushed thrice daily.

When surveyed about the type of toothbrush used, 22 students used electric toothbrushes and 188 students responded that they use manual toothbrushes. In the BDS group, 16 (20.8%) used electric toothbrushes, while 61(79.2%) used manual toothbrushes. From the MBBS group, 5(6%) used electric toothbrushes, while 79(94%) used manual toothbrushes. In the AHS group, 1(2%) used an electric toothbrush, while 48(98%) used manual toothbrushes.

Students were then asked about which toothbrush they believed is better. 72 students answered electric toothbrushes while 138 students answered manual toothbrushes. Distribution of the results within the undergraduate degree (Table 3).

A majority of students believed that manual toothbrushes are better. However, when comparing the three groups, more MBBS students believed that electric toothbrushes are better, while in the other two groups, the majority of the students believed that manual toothbrushes were better. With regards to flossing, 88 students responded that they do not floss, 24 flossed once daily, 94 flossed only when there is a need or when food is stuck between teeth, and 4 flossed twice daily.

From the BDS group, 30(39%) of the students did not floss, 15(19.5%) of the students flossed once daily, 31(40.3%) of the students flossed only when there was a need or food was stuck between teeth, while 1(1.3%) of the students flossed twice daily. From the MBBS group, the results in each category were 37(44%), 5(6%), 40(47.6%), and 2(2.4%), respectively. From the AHS group, the results in each category were 21(42.9%), 4(8.2%), 23(46.9%), and 1(2%), respectively.

Students were additionally asked about the use of toothpicks. 54 students responded that they do not use toothpicks,

2 used toothpicks once a day, 153 used toothpicks only when there is a need or when food is stuck between teeth, and 1 used toothpicks twice a day. Distribution of the results within the undergraduate degree is shown in the table 2.

Students were then asked whether they use water flossers. 204 students responded no, and 6 students responded yes. From the BDS group, 74(96.1%) of the students responded in negative, while 3(3.9%) responded yes. From the MBBS group, 82(97.6%) of the students responded no, while 2(2.4%) responded yes. From the AHS group, 48(98%) of the students responded no, while 1(2.9%) responded yes.

Students were further surveyed about which interdental aid they preferred to use. 73 students preferred dental floss, 19 preferred inter-dental brushes, 109 preferred toothpicks, and 9 students preferred water flossers.

From the BDS group, 25(32.5%) students preferred dental floss, 4(5.2%) preferred inter-dental brushes, 44(57.1%) preferred toothpicks, and 4(5.2%) preferred water flossers. From the MBBS group, the results in each category were 28 (33.3%), 12(14.3%), 42(50%), and 2(2.4%), respectively. From the AHS group, the results in each category were 20(40.8%), 3(6.1%), 23(46.9%) and 3(6.1%), respectively.

Students were then asked how often they use mouthwash. 126 students responded that they do not use mouthwash, 35 students responded that they use mouthwash once a day, 1 MBBS student used mouthwash thrice a day, 5 students used mouthwash twice a day, and only used a mouthwash when there is a need. Distribution of the results within the undergraduate degree is shown in the table 4. Students were then asked whether or not they cleaned their tongues. 54 responded in negative, and 156 responded yes.

From the BDS group, 7(9.1%) of the students responded no, while 70(90.9%) responded yes. From the MBBS group, 36(42.9%) students responded no, while 48(57.1%) responded yes. From the AHS group, 11(22.4%) of the students responded no, while 38(77.6%) responded yes.

Students were then asked about whether or not they smoked. 174 responded in negative, and 36 responded yes. From the BDS group, 53(68.8%) students responded no, while 24(31.2%) responded yes. From the MBBS group, 73(86.9%) students responded no, while 11(13.1%) responded yes. From the AHS group, 48(98%) students responded no, while 1(2%) responded yes.

Table 2: Opinion on which type of toothbrush is better * undergraduate degree cross tabulation

Opinion on which type of toothbrush is better		Undergraduate Degree			Total
		BDS	MBBS	AHS	
Electric	Count	30	23	19	72
	% within undergraduate degree	39.0%	27.4%	38.8%	34.3%
Manual	Count	47	61	30	138
	% within undergraduate degree	61.0%	72.6%	61.2%	65.7%
Total	Count	77	84	49	210
	% within undergraduate degree	100.0%	100.0%	100.0%	100.0%

Table 3: Use of Toothpick * Undergraduate Degree Cross tabulation

Use of Toothpick		Undergraduate degree			Total
		BDS	MBBS	AHS	
Do not use toothpicks	Count	16	22	16	54
	% within undergraduate degree	20.8%	26.2%	32.7%	25.7%
Once a day	Count	1	1	0	2
	% within undergraduate degree	1.3%	1.2%	0.0%	1.0%
Only when there is a need/food is stuck between teeth	Count	60	60	33	153
	% within undergraduate degree	77.9%	71.4%	67.3%	72.9%
Twice daily	Count	0	1	0	1
	% within undergraduate degree	0.0%	1.2%	0.0%	0.5%
Total	Count	77	84	49	210
	% within undergraduate degree	100.0%	100.0%	100.0%	100.0%

Table 4: Use of Mouthwash Frequency * Undergraduate Degree Cross tabulation

Use of Mouthwash Frequency		Undergraduate Degree			Total
		BDS	MBBS	AHS	
I do not use a mouthwash	Count	49	49	28	126
	% within undergraduate degree	63.6%	58.3%	57.1%	60.0%
Once a day	Count	10	17	8	35
	% within undergraduate degree	13.0%	20.2%	16.3%	16.7%
Thrice a day	Count	0	1	0	1
	% within undergraduate degree	0.0%	1.2%	0.0%	0.5%
Twice a day	Count	2	2	1	5
	% within undergraduate degree	2.6%	2.4%	2.0%	2.4%
Whenever there is a need/When I experience bad breath in morning	Count	16	15	12	43
	% within undergraduate degree	20.8%	17.9%	24.5%	20.5%
Total	Count	77	84	49	210
	% within undergraduate degree	100.0%	100.0%	100.0%	100.0%

DISCUSSION

Based on the results, there seems to be a considerable difference between the oral hygiene practices performed by the BDS, MBBS, and AHS groups. Previous studies showed that the oral hygiene practices of BDS students were slightly better than MBBS and AHS students which is consistent with the findings of this study^{6,7,8,9,10}.

Most of the students used manual toothbrushes rather than electric toothbrushes. Electric toothbrushes can better remove plaque around the molar and premolar areas^[11]. However, when asked which toothbrush the students felt was better, the majority of the students from all three groups' preferred manual toothbrushes, reflecting another gap in the dental curriculum.

Interproximal cleaning practices were surprisingly ignored by all three groups and were mostly limited to only when food was stuck between teeth or when there was another similar need. This finding is consistent with the study conducted in China¹². Gingivitis and plaque is reduced more effectively by flossing and brushing^[13]. However, floss is comparably more challenging to do, which can reduce its daily use¹⁴. This might explain why toothpicks were preferred over other interdental cleaning aids by all three groups. The use of water flossers was poor in all three groups. Water flossers are effective in improving gingival health¹⁵; hence their use should have been more common, especially among dental students who study about water flossers.

Most of the students did not use mouthwash which is consistent with a previous study done by HS Halawany¹⁰. Most of the students who did use mouthwash only used it when there was a need or when they experienced bad breath in the morning. The MBBS group was an exception, in which most students who used mouthwash used it once daily. Previous studies have indicated that mouthwash can help reduce bacterial loads. However, this oral hygiene practice also has several adverse effects that limit its use¹⁶. The majority of the students cleaned their tongues.

The majority of the students denied smoking. It was interesting to note that more BDS students were smokers than the other two groups, although the harmful effects of smoking are extensively covered in the BDS curriculum. This finding was in contrast to another study conducted in Karachi, Pakistan, which showed smoking to be more common among MBBS students¹⁷.

One limitation of this study was its cross-sectional design, which showed the current trend in oral hygiene practices but could not capture the change in practices amongst the students over time. However, the questions asked were extensive enough to cover all areas of oral hygiene practices and established areas in the dental curriculum that did not contribute to the enforcement of oral hygiene practices.

CONCLUSION

Based on the results of this study, it can be concluded that dental education in Pakistan affects the oral hygiene practices of university students since dental students have better oral hygiene

practices than MBBS and AHS students. However, most MBBS students believed that electric toothbrushes were better than manual toothbrushes, which seems to reflect a lack of knowledge of BDS and AHS students in the role of electric toothbrushes.

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Contribution: **AH:** Conceptualization and design of Study, **MAH,AH, OA:** Data Collection, **FJ:** Data Analysis and data interpretation, **MN:** Compiling the results, **NH,AB:** Manuscript Writing, **NH:** Proof reading and referencing

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