

A survey of oral hygiene practices amongst dental students

Inaam Ahmad^a, Muhammad Mansoor Qadri^b, Maham Niazi^c, Tayyaba Saleem^d, Urooj Khalid^e

Abstract

Introduction: Oral hygiene measures are put into practice in order to maintain an oral environment free of germs and diseases. Oral diseases have a high prevalence and they pose a great threat to an individual's quality of life. Oral self-practices of dental students allow them to become a role model to others, thus propagating the importance of oral hygiene. Aim was to investigate the awareness of oral hygiene habits and practices amongst the dental students.

Material and Methods: All undergraduate students enrolled at the dental section of Islamabad medical and dental college were given a self-administered structured, anonymous questionnaire after taking verbal consent. The answers of the filled questionnaires were entered and analyzed through SPSS version 22.

Results: Out of a total of 196 dental students included in the study many were not practicing the oral hygiene etiquette properly. No noteworthy differences were found when comparing the results for students in the pre-clinical and clinical years.

Conclusions: Dental students of this study expressed lack of oral self-hygiene practices with increasing year of their education. Students should be encouraged to include oral self-care practices in their daily lives, to promulgate the importance of a disease free mouth and to become role models for the patients and society.

Keywords: Oral health; oral hygiene awareness; dental students

Introduction

Oral hygiene is the practice of keeping the mouth and teeth clean. Good Oral hygiene is a necessity, lack of which results in a variety of different oral health problems. Dental caries, periodontal disease, malocclusion and oral cancer are common dental diseases affecting people worldwide¹. Preventive oral health knowledge, behavior and its practice are important ways of keeping our teeth healthy.² The 2000 report, Oral Health in America: A Report of the

Surgeon General, emphasized essential link between oral health and general health and well-being. It first described oral health as a "silent epidemic," strongly suggesting that it extends far beyond just achieving and maintaining healthy teeth.³ Brushing twice daily after breakfast and before going to bed, flossing daily and the use of fluoride containing mouthwashes and toothpastes are some of the recommended means of maintaining good oral hygiene. Also it is advocated to use proper tooth brushing techniques and to change the toothbrushes every 3 to 6 months. Tongue cleaning is also a recommended oral hygiene practice.

Dentists and dental students should educate others on the importance of oral hygiene and be an example with their own oral health practices. Although brushing is the most commonly used method of cleaning, the percentage of students brushing their teeth

^{a,b,e} BDS, House Officer, Islamabad Medical and Dental College, Islamabad.

^c Corresponding Author: BDS, MSc, Assistant Professor & Head Department of Oral Biology, Islamabad Medical and Dental College, SZABMU, Islamabad. Email: maham.niazi@iideas.edu.pk

^d BDS, FCPS,MME, Associate Professor & Head of Prosthodontics, Islamabad Medical and Dental College, SZABMU, Islamabad.

twice daily is low.² Inappropriate brushing times and/or the complete lack of the habit of brushing results in poor oral hygiene. Oral hygiene has remained as an ignored and unappreciated social problem. Most people are unaware of the fact that there exists a strong relationship between poor oral hygiene and systemic diseases.²

Earlier studies that have been carried out, showed that dentists themselves are not motivated enough to practice oral hygiene habits properly.⁴ Educating dental students on preventive and community dentistry has a strong and positive influence on their oral health related behavior which in turn helps their patients as well.

Dental students are a valuable resource for developing community awareness of good oral hygiene practices, for effective community service they need to become role models. Despite the importance of this economic, convenient and powerful tool available for community awareness and service programs little research is done in Pakistan to highlight and utilize this area for public benefit. This study was carried out to explore the gap between student's own oral hygiene knowledge and their practices.

Material and Methods

This uni-centric qualitative, cross sectional study was carried out on all undergraduate students enrolled from first to final year BDS program at Islamabad Medical and Dental College, by using convenience sampling. Ethical approval was obtained from the Institutional review board of Islamabad Dental Hospital. A verbal consent was taken from all the participants, and students unwilling to participate in the study were excluded.

A self-administered, anonymous questionnaire consisting of 19 questions, was distributed after lectures to students of each class in their lecture halls after taking due permission from the respective teachers. The

questionnaire was made by reviewing the literature and then modifying it to fit local requirements. Pilot study was carried out and necessary changes were made accordingly. A brief introduction to the study was given and the questionnaire was explained to the students. Students were reassured that the data would be kept confidential. Each questionnaire approximately took 10 minutes to complete.

Data collected was entered and analyzed through SPSS version 22. Descriptive analysis was done and frequency and percentages were calculated for qualitative variables.

Results

A total of 196 out of 201 students filled the questionnaire. The answers to various questions were assessed individually and also compared amongst the students of various years. A total of 192 out of 196 dental students confirmed that they brush daily however, 4 students disclosed that they did not brush on a daily basis. Out of those who claimed to brush daily, 192(76) revealed that they brushed twice a day. Answering the question on duration of brushing 134 out of 192(69%) revealed that they clean their teeth for about 1-2 minutes every time.

Manual soft tooth brush was used by 50% of the dental students. When asked about the mode of brushing and the techniques used 95 subjects (48%), confirmed that they use both horizontal and vertical strokes while brushing their teeth. Comparing the application of brushing strokes amongst different years of students did not give any noteworthy result. Dental students said that they change their tooth brush once in 3 months duration (67%). Also 51% dental students prefer presence of fluoride while selecting their toothpaste. This percentage was high amongst the students in clinical years. Less than half (46%) of the students in the present study revealed that they use

dental floss. Of these only 31% revealed that they use floss on a daily basis (Table I).

Table I: Use of dental floss by dental students

		Year of Dental education				Total
		1st Year	2nd Year	3rd Year	4th Year	
How often do you floss your teeth?	Do not use it	32	29	24	21	106
	Once daily	6	5	8	9	28
	Twice daily	1	1	6	4	12
	Once or twice in a week	3	7	8	5	23
	Occasionally	7	5	7	8	27
Total		49	47	53	47	196

When asked about the use of tooth pick by dental students, 53% said they did not use toothpicks, while 46% students said they did use toothpicks to clean the interdental areas, they were from the clinical years (third and final year) of training. Mouthwash was used by 57% of the dental students to maintain their oral hygiene. Out of these 57% more usage of mouth wash was seen in students of the preclinical years, while its use declined as the students of final year were approached, with 31% and 27% from 2nd and 1st year respectively using mouthwash daily and the least number of students (only 26) from 3rd and final year reported using a mouthwash. Further inquiring about the frequency of mouthwash, only 43 students out of a total of 196 (22%) confirmed that they use a mouthwash once daily (Figure 1). Some (17%) also responded with an occasional use of mouthwash. Again a similar trend of more and regular mouthwash practice was observed in the students of preclinical years as compared to the clinical years.

When asked if they cleaned their tongues or not, 159 students (81%) confirmed that they do clean their tongues and 37% of these revealed that they clean their tongue once a day (Figure 1). In a question on tongue cleaning the students were asked about the tongue cleaning tool they used. They were given the options of a tongue cleaner or scraper, tooth brush and finger. Most students (52%) had the habit of cleaning their

tongues with a toothbrush with 27% cleaning their tongues with a tongue cleaner and only 3 students (1.5%) agreed upon using their finger for tongue cleaning.

Table II: Cleaning of teeth before a social occasion

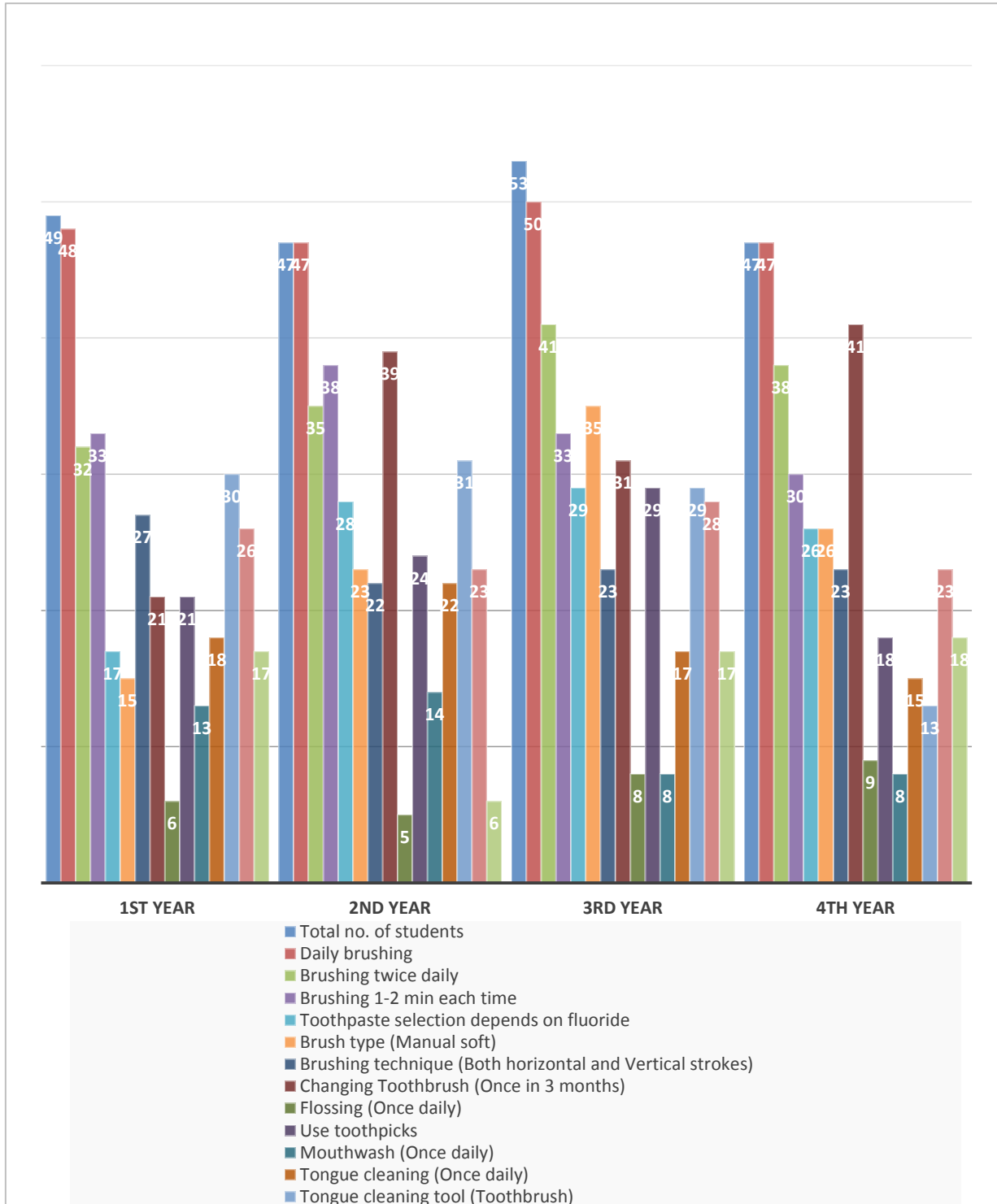
		Year of Dental education				Total
		1st Year	2nd Year	3rd Year	4th Year	
Do you clean your teeth especially before a social occasion to avoid embarrassment due to bad breath?	Yes always	26	23	28	23	100
	Sometimes	14	10	12	10	46
	No	9	14	13	14	50
Total		49	47	53	47	196

Replying to the question whether they clean their teeth before going to a social occasion or an event to avoid embarrassment due to bad breath, 51% students revealed that they always do. As seen in Table II, only 25% said they do not clean their teeth before a social occasion.

Table III: Last periodontal treatment done

		Year of Dental education				Total
		1st Year	2nd Year	3rd Year	4th Year	
When did you have your last periodontal treatment done?	<1 year	17	6	17	18	58
	2 or more years	8	5	8	5	26
	Never	24	36	28	24	112
Total		49	47	53	47	196

Lastly when asked about the most recent dental checkup these students had (Table III), 29% said they went to a dentist or had a dental checkup during the past one year (Figure 1), 13% answered that they had cleaning or periodontal evaluation done more than 2 years ago. While a much higher percentage of 57% students confirmed that they never had any periodontal treatment or a routine dental checkup. Figure 1 depicts oral hygiene practice comparison of the 4 years.



Discussion

In this study dental students show lack of oral self-hygiene practices with increasing year of their education. Over the years, very few studies have been carried out investigating oral hygiene habits and practices of

dentist/dental students. In a study conducted in 2012 by Reddy and Saimadhavi investigating 425 students, only 34.9% of students were following oral self-health habits strictly.⁵ Gopinath in 2010⁶ concluded that 55.9% of all respondents brushed twice a

day. The present study gave a higher frequency (74%) of dental students brushing twice daily. This result is in accordance with other studies conducted in Mongolia, India and United States.^{4,7-8}In another similar study in 2015, Gupta and Saxena examined a group of 200 dental students and found out that majority of the students brushed their teeth once daily for 2 minutes (60%) and amongst them, mostly before breakfast whereas in the present study 74% of the dental students reported to brush twice a day. In 2015 Julien Kirchhoff and Andreas Filippi carried out another study comparing oral health behavior among dental students, students of other disciplines and fashion models in Switzerland. Results exposed that fashion models were extremely apprehensive regarding their oral hygiene as compared to the dental students.⁹

In the present study 50% students confirmed that they use manual soft tooth brush. This is total opposite to the study by Julien and Filippi where 61% of the surveyed students used a sonic toothbrush. Comparing the application of brushing strokes amongst different years of students did not give any noteworthy result, with 67% dental students reporting to change their tooth brush once in 3 months. Also 51% dental students preferred the presence of fluoride while selecting their toothpaste. This percentage (51%) was high amongst the students in clinical years whereas 75% of the subjects used normal toothpaste in a similar study.⁹ Motivation and self-control are correlated to the regular use of dental floss.¹⁰ This regular use of interdental cleaning aids such as the dental floss, can be a good source of prevention of caries, gingivitis and periodontitis.¹¹ Only 45% of the students in the present study revealed that they use floss with 31% out of the reported users claiming to use floss on a daily basis. This result is somewhat similar with a 2004 study on Swiss population reporting 44% of dental floss usage, but the percentage is extremely low as compared to another study in 2015

reporting 71% dental students using dental floss regularly.^{8,12}

It has been reported in studies that attitude and behavior of dental students fluctuate in accordance with their year of studies.¹³ Students should have a better knowledge and application of that understanding as they graduate ahead from the preclinical to the clinical years. As far as the question of toothpick use for interdental cleaning was asked in the present study, more students (53%) from the clinical years agreed to its use. Students who confirmed that they use mouthwash resulted to 57%, with more mouthwash usage in students of preclinical years. This percentage coincides previous study by Sharda et al.¹⁴ but is not in agreement with the study by Paul B et al.¹ where they found only 9% of the subjects to be using mouthwash as an oral hygiene aid. When asked about tongue cleaning 81% dental students answered to clean their tongue and majority revealed that they clean their tongue once a day, similar to another study conducted by Gupta S.⁴

In the present study only 29% said they had a dental checkup during the past one year. 13% answered that they had cleaning or periodontal evaluation more than 2 years ago; while 57% students confirmed that they never had any periodontal treatment or a routine dental checkup. These 57% students are of concern showing the lack of interest they have in maintaining their own oral hygiene even though they are getting educated on the subject. These results being coincident with studies by Jain et al.¹⁵ and Pandya et al.¹⁶ whereas study conducted in Bangalore by Bhat et al.¹⁷ evaluated a much higher level (80.1%), visiting the dentist regularly.

The results of this present study advocates that awareness of oral health practices should be stressed upon by the use of various awareness programs, seminars and campaigns for students at different levels of education. Dental students should be motivated to practice standard oral hygiene

measures. They should be involved in educating the general public on regular basis during dental camps. Quiz competitions can be conducted to refresh their knowledge, and to acquaint them with evidence based and new innovations in oral hygiene measures. These activities will not only increase their self-confidence, but also help them to become better role models for family, friends and general public.

The limitations of the present study are that, this was a cross sectional study restricted to a single dental college in Islamabad. There could also have been biased responses from students who got influenced by the answer of their peers.

Conclusions

In this study dental students show lack of oral self-hygiene practices with increasing year of their education. They should be encouraged to include oral self-care practices in their daily lives, to promulgate the importance of a disease free mouth and to become role models for the patients and society.

References

1. Paul B, Basu M. Awareness and practices of oral hygiene and its relation to socio-demographic factors among patients attending the general outpatient department in a tertiary care hospital of Kolkata, India. *J Family Med Prim Care*. 2014 Apr-Jun;3(2):107-11.
2. Jain N, Mitra D. Oral Hygiene awareness and practice among patients attending OPD at Vyas Dental College and Hospital, Jodhpur. *J Indian SocPeriodontol*. 2012;16(4):524-8.
3. U.S. Public Health Service (PHS), Oral Health in America: A Report of the Surgeon General, Washington, DC: U.S. Department of Health and Human Services (HHS); 2000. Available at www.surgeongeneral.gov/library/oralhealth/. Last accessed April 2017.
4. Gupta S, Saxena S. Oral health attitude, knowledge and behavior of dental students of Jaipur, Rajasthan:A comparative study. *Journal of Indian Association of Public Health Dentistry*. 2015;13(4):459-64.
5. Reddy L, Saimadhavi N. Oral hygiene practices and habits among dental students and staff in a dental college, India. *Cumhuriyat Dent J*. 2014;17(1):7-13.
6. Gopinath V. Oral hygiene practices and habits among dental professionals in Chennai. *Indian J Dent Res*. 2010;21(2):195-200.
7. Merhant A, Pitiphat W, Douglass CW. Oral hygiene practices and periodontitis in health care professionals. *J Periodontol* 2002;73: 531-35.
8. Kumar S, Motwani K, Dak N. Dental health behavior in relation to caries status among medical and dental undergraduate students of Udaipur district, India. *Int J Dent Hygiene*. 2010;8:86-94.
9. Kirchoff J and Filippi A. Comparison of Oral health behavior among dental students, students of other disciplines, and fashion models in Switzerland. *Swiss Dental Journal SSO*. 2015;125:1337-44.
10. Schwarzer R, Antoniuk A, Gholami M. A brief intervention changing oral self care, self-efficacy, and self-monitoring. *Br J Health Psychol*. 2014;10.1111/bjhp.12091.
11. Loe H. Oral hygiene in the prevention of caries and periodontal disease. *Int Dent J*. 2000;50:129-139.
12. Staehle H J. Oral health behavior in Germany and Switzerland. *SchweizMonatsschrZahnmed*. 2004;114:1236-1251.
13. Davidovic B, Jankovic S, Ivanovic D, Grujicic I. Oral health assessment among dental students. *Serbian Dent J*. 2012;59:141-4.
14. Sharda A, Sharda S. Factors influencing choice of oral hygiene products used among the population of Udaipur, India. *Int J Dent Clinics* 2010;2:7-12.
15. Jain N, Mitra D, Ashok KP, Dundappa J, Soni S, Ahmed S. Oral hygiene-awareness and practice among practice among patients attending OPD at Vyas Dental College and Hospital, Jodhpur. *J Indian Soc Periodontal* 2012;16:524-8.
16. Pandya H, Dhaduk R. Oral hygiene status in central Gujarat, 2010- An Epidemiological Study. *J Dent Sci* 2012;2:51-3.
17. Bhat PK, Kumar A, Aruna CN. Preventive oral health knowledge, practice and behaviour of patients attending dental institution in Bangalore, India. *J.Int Oral Health* 2010;2:17-22