

Oral Hygiene Practice And Knowledge In Dental Students In Visnagar: A Comparative Study

¹Dr. Riddhi Sureshbhai Goswami, ^{2*}Dr. Dhaval Niranjan Mehta, ³Dr. Niral Sunil Thaker, ⁴Dr. Patel Bindiya Yatik, ⁵Dr. Chavada Raksha Prakashsinh, ⁶Dr Hitesh B. Patel

¹MDS, Oral Medicine and Radiology, Department of Oral Medicine and Radiology, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar.

^{2*}Professor and Head, Department of Oral Medicine and Radiology, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar. Email address: omdrdhaval@gmail.com

³Senior Lecturer, Department of Oral Medicine and Radiology, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar

⁴MDS, Oral Medicine and Radiology, Private Practitioner, Mehasana, Gujarat, India.

⁵MDS, Oral Medicine and Radiology, Private Practitioner, Ahmedabad, India

⁶Tutor, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar.

ABSTRACT

Background: Oral health is traditionally defined as an oral status that is free of diseases, which not only makes people look beautiful, but also contributes to the normal function of mouth. **Aim:** To evaluate self-reported oral hygiene practice and knowledge in dental students of Narsinhbhai Dental College and Hospital, Visnagar. **Method:** This cross-sectional study was conducted on total 391 voluntarily participated students of Narsinhbhai Patel Dental College, in the month of October 2020. It included 151 students of pre-clinical group, 166 students of clinical group, 74 students in the group of interns. A total of 15 questions were designed to evaluate the oral hygiene practice and knowledge, in the format of multiple choice questions. **Result:** In this study most of the students brush their teeth twice daily for 2 min most of the students visited the dentist only when problems arise. Majority of students considered oral health as important as general health and believed that oral health affects the general health too. Students were also aware of the harmful effects of tobacco while only few of them were overindulged in them. **Conclusion:** In this study, it was observed that oral hygiene practice score and knowledge score was greater in the group of interns followed by the group of clinical students and pre-clinical group of students as year increases, knowledge score and oral hygiene practice score increases and knowledge increases, oral hygiene score increases.

Keywords: Dental Hygiene, Dental Students, Oral habits,

INTRODUCTION

Healthy mouth is a unique and rare gem, maintaining a good oral health is regarded as a fundamental human right.¹ Oral health is traditionally defined as an oral status that is free

of diseases, which not only makes people look beautiful, but also contributes to the normal function of mouth.² In 2016, the Federal Dental International (FDI) Dental World Federation redefined the oral health comprehensively and recognizing that oral health was multifaceted and involved the ability to smell, taste, swallow, chew, smile, touch, speak, and convey a lot of emotions through facial expressions with confidence and without discomfort, pain, and disease of the craniofacial region.³

It is reported that oral diseases has impact on other systemic diseases like diabetes, digestive disease, stroke, cardiovascular disease, metabolic syndrome, adverse pregnancy outcomes, obesity.⁴⁻⁷

Public oral health can be improved by the attitudes and behaviour of oral health providers towards their own dental and oral hygiene.⁸ As oral health attitudes exhibit their mind's willing to oral health and reflect practically as oral health behaviour, oral health providers can advise patients and sets good examples of correct oral practices to lift the awareness on oral disease prevention as one of their substantial responsibilities.⁹

MATERIAL AND METHOD

This cross-sectional study was conducted on total 391 voluntarily participated 1st to 4th year students and interns of Narsinhbhai Patel Dental College. The study was carried out 151 students of pre-clinical group (1st and 2nd year), 166 students in the group of clinical students (3rd and 4th year), 74 students in the group of interns in the month of October 2020. First pilot study was carried out using a self-governed structured questionnaire written in English and which was later applied to the study group. Only the year of study were obtained of the participant study group students, no other academic records were obtained. Informed consent were taken as part of standard procedures from the study group students. A total of 15 questions were designed to evaluate the oral hygiene practice (7 questions), knowledge of students (8 questions) between preclinical, clinical students and interns. The questionnaire was in the form of multiple choice questions. The students were told to grab only one answer for each question. The students were allowed to interact with the study committee for the meaning of any word or question.¹⁰

The questionnaire was transformed into an online – survey using web based survey tool – google form. After approval by the ethics committee of SPU, the survey link was sent by E-mail to all registered dental students of 1st year to 4th year BDS and interns.

RESULT

Table 1 shows result of oral hygiene practice questions. Among 391 participants, 50.0% students brush their teeth twice in a day. Maximum number of students 72.7% of clinical group of students brush twice a day followed by interns 58.1% and 21.2% preclinical group students. Maximum number 53.5% students brush their teeth in the morning and at night before sleep. Clinical group of 78.3% students followed by 62.2% interns and 21.9% preclinical students brush their teeth in the morning and at night before sleep. Out of all students maximum 40.9% students brush their teeth in the duration of 2 mins. Maximum 56.8% students of intern group followed by 56.0% students of clinical group and 16.6% preclinical students brush their teeth in the duration of 2 mins. Out of all, 54.5% students

replace their tooth brush in duration of 3-6 months. 63.5% interns group students replace their tooth brush in duration of 3-6 months followed by 61.6% preclinical and 44.0% clinical group of students. Among all, 67.7% students visit to a dentist only when problems arise. 84.1% students of preclinical group followed by 62.0% clinical students and 46.6% interns visit to a dentist only when problems arise. Out of all, 98.0% students don't have any adverse oral habit. Maximum 98.7% students of preclinical group followed by 98.6% interns and 97.0% clinical group of students don't have any adverse oral habit. Among all the students maximum 98.7% students think tongue cleaning is important. Maximum 100.0% interns group of students think tongue cleaning is important followed by 99.4% clinical group of students and 97.3% preclinical group of students.

Table 2 shows result of knowledge questions. Among 391 students, maximum 59.3% students aware of the term halitosis. Maximum 100.0% students of intern group followed by 78.3% students of clinical group and 18.5% preclinical group students aware of the term halitosis. Out of all total 64.5% students were aware of the cause of bleeding gums and dental caries.

Maximum 100.0% students of intern group followed by 90.4% students of clinical group of students and 18.5% students of preclinical group. Among all 54.5% students were strongly agree that sweets, sugary food and drinks can cause tooth decay. 70.3% interns followed by 55.4% clinical group students and 45.7% preclinical group students were strongly agree that sweets, sugary food and drinks can cause tooth decay. Out of all total 56.3% students were agree that using fluoride toothpaste strengthens teeth. Maximum 62.9% preclinical students were agree that using fluoride toothpaste strengthens teeth followed by 60.8% clinical group of students and 32.4% intern group students. Total 95.4% students think oral health is as important as general health. 97.4% preclinical group of students followed by 94.6% interns and 94.0% clinical group students think oral health is as important as general health. Among all 83.9% students believe that oral diseases can affect general health. Maximum 95.2% clinical group of students followed by 94.6% students of intern group and 66.2% preclinical group of students believe that oral diseases can affect general health. 95.9% students were concerned about appearance and aesthetic of their teeth. 96.7% students of preclinical group concerned about appearance and aesthetic of their teeth followed by 95.9% interns and 95.2% students of clinical group. Out of all total 98.7% students were aware of the harmful effect of tobacco. Maximum 100.0% preclinical group of students followed by 98.6% interns group of students and 97.6% clinical group of students were aware of the harmful effect of tobacco.

TABLE 1: ORAL HYGIENE PRACTICE IN DENTAL STUDENTS

Sr No	Question	Responses	Preclinical	Clinical	Interns	Total	Chi square	P value
1	Frequency of brushing	Once	118 (78.1%)	43 (26.1%)	29 (39.2%)	190 (48.7%)		0.00
		Twice	32 (21.2%)	120 (72.7%)	43 (58.1%)	195 (50.0%)		

		Thrice	1 (0.7%)	2 (1.2%)	3 (4.05%)	6 (1.53%)		
2.	At what time you brush your teeth	After breakfast	7 (4.6%)	10 (6.0%)	0 (0.0%)	17 (4.3%)		0.00
		Morning and night before sleep	33 (21.9%)	130 (78.3%)	46 (62.2%)	209 (53.5%)		
		After every meal	0 (0.0%)	1 (0.6%)	1 (1.4%)	2 (0.5%)		
		Other	111 (73.5%)	25 (12.1%)	27 (36.5%)	163 (41.7%)		
3.	Duration of brushing teeth	Less than 2mins	3 (2.0%)	18 (10.8%)	12 (16.2%)	33 (8.4%)		0.00
		2 mins	25 (16.6%)	93 (56.0%)	42 (56.8%)	160 (40.9%)		
		More than 2 mins	77 (51.0%)	42 (56.8%)	19 (25.7%)	138 (35.3%)		
		Never noticed	46 (30.5%)	13 (7.8%)	1 (1.4%)	60 (15.3%)		
4.	How often you replace tooth brush	Before 3 months	4 (2.6%)	50 (30.1%)	19 (25.7%)	73 (18.7%)		0.00
		3-6 months	93 (61.6%)	73 (44.0%)	47 (63.5%)	213 (54.5%)		
		Once a year	10 (6.6%)	8 (4.8%)	6 (8.1%)	24 (6.1%)		
		No specific time	44 (29.1%)	35 (21.1%)	2 (2.7%)	81 (20.7%)		
5.	Frequency of your visit to a dentist	Every 6 months	1 (0.7%)	39 (23.5%)	19 (26.0%)	59 (15.1%)		0.00

		Annually	23 (15.2%)	24 (14.5%)	21 (28.3%)	68 (17.2%)		
		Only when problems arise	127 (84.1%)	103 (62.0%)	34 (46.6%)	264 (67.7%)		
6.	Do you have any adverse oral habit	Yes	2 (1.3%)	5 (3.0%)	1 (1.4%)	8 (2.0%)		0.511
		No	149 (98.7%)	161 (97.0%)	73 (98.6%)	383 (98.0%)		
7.	Do you think tongue cleaning is important	Yes	144 (97.3%)	165 (99.4%)	74 (100.0%)	383 (98.7%)		0.142
		No	5 (3.31%)	3 (1.80%)	0 (0.0%)	8 (2.0%)		

* P value < 0.05 was considered to be statistically significant

TABLE 2 : KNOWLEDGE OF VARIOUS ORAL HABITS IN DENTAL STUDENTS

Sr No	Question	Responses	Preclinical	Clinical	Interns	Total	Chi square	P value
1.	Are you aware of the term 'halitosis'	Yes	28 (18.5%)	130 (78.3%)	74 (100.0%)	232 (59.3%)		0.00
		No	123 (81.5%)	36 (21.7%)	0 (0.0%)	159 (40.7%)		
2.	Are you aware of the cause of bleeding gums and dental caries	Yes	28 (18.5%)	150 (90.4%)	74 (100.0%)	252 (64.5%)		0.00
		No	123 (81.5%)	16 (9.6%)	0 (0.0%)	139 (35.5%)		

)		
3.	Do you agree that sweets, sugary food and drinks can cause tooth decay	Strongly agree	69 (45.7%)	92 (55.4%))	52 (70.3%)	213 (54.5%))		0.039
		Agree	78 (51.7%)	71 (42.8%))	22 (29.7%)	171 (43.7%))		
		Disagree	2 (1.3%)	1 (0.6%)	0 (0.0%)	3 (0.8%)		
		Strongly disagree	2 (1.3%)	2 (1.2%)	0 (0.0%)	4 (1.0%)		
4.	Do you agree that using fluoride toothpaste strengthens your teeth	Strongly agree	33 (21.9%)	50 (30.1%))	25 (33.8%)	108 (27.6%))		0.00
		Agree	95 (62.9%)	101 (60.8%))	24 (32.4%)	220 (56.3%))		
		Disagree	17 (11.3%)	13 (7.8%)	14 (18.9%)	44 (11.3%))		
		Strongly disagree	6 (4.0%)	2 (1.2%)	11 (14.9%)	19 (4.9%)		
5.	What is the importance of oral health as	As important as general health	147 (97.4%)	156 (94.0%))	70 (94.6%)	373 (95.4%))		0.566

	per your opinion							
		Important but less than general health	3 (2.0%)	9 (5.4%)	3 (4.1%)	15 (3.8%)		
		Don't care about oral health	1 (0.7%)	1 (0.6%)	1 (1.4%)	3 (0.8%)		
6.	Do you believe that oral diseases can affect general health	Yes	100 (66.2%)	158 (95.2%)	70 (94.6%)	328 (83.9%)		0.00
		No	51 (33.8%)	8 (4.8%)	4 (5.4%)	63 (16.1%)		
7.	Are you concerned about appearance and aesthetic of your teeth	Yes	146 (96.7%)	158 (95.2%)	71 (95.9%)	375 (95.9%)		0.795
		No	5 (3.3%)	8 (4.8%)	3 (4.1%)	16 (4.1%)		
8.	Are aware of the harmful effects of tobacco	Yes	151 (100%)	162 (97.6%)	73 (98.6%)	386 (98.7%)		0.162
		No	0 (0.0%)	4 (2.4%)	1 (1.4%)	5 (1.3%)		

* P value < 0.05 was considered to be statistically significant

DISCUSSION

Health behavior is defined as “the activities undertaken by people in order to protect, promote, or maintain health and to prevent disease.”¹¹ Many systemic diseases are related to oral conditions, and thus, general health requires efforts of dentist.¹²⁻¹⁵

An important task of oral health professionals is to instil in their patients the correct oral habits to prevent oral diseases. Therefore, there is a need to determine the status of their own oral health knowledge and behaviors.¹⁶

Dental students knowledge about oral health is mainly obtained from the information taught to them in their syllabus throughout the study program.¹⁷ In the present study, 15 questions were asked to assess the oral hygiene practices, knowledge and attitude followed by the subjects.

This evidence to suggest that the oral health knowledge and behavior of dental students (DS) varied in the preclinical, clinical and interns group of students in dental education. The study sample may not reflect the student’s oral hygiene practice, knowledge and beliefs of all students in NPDCH, Visnagar as the study conducted only in NPDCH college. Due to participants seeking social desirability, they may over score when it comes to desirable behaviour. This may lead to bias.¹⁸

There is enough evidence to consider twice a day as the recommended frequency of tooth brushing to maximize the effect of using fluoridated toothpaste.¹⁹

In the present study, maximum number of students brush their teeth twice a day in the morning and at night. This was in contrast to the findings of study by Shruti Gupta et al who found that maximum number of students brush their teeth once a day.²⁰

Brushing duration is another important factor in plaque removal efficacy. While it is believed that increased brushing time does help in more plaque removal, the brushing technique could confound study comparisons. Ashley has recommended 3 min as the ideal duration for manual brushing.^{21,22}

Majority of students in our study brush their teeth for 2mins. This result was similar to the findings of study by Shruti Gupta et al.²⁰

Greater percentages are recorded in our study who replace their tooth brush in duration of 3-6 months. The result of this study was indistinguishable to the findings of study by Maan Surinder Singh et al.²³

Among all participants, maximum number of students visit to a dentist only when problem arises in this study. which was similar to the findings of study by Shruti Gupta et al who also found that maximum number of students visit to a dentist only when problem arises.²⁰

In our study Out of all the students, Maximum number of students did not have any adverse oral habit like tobacco or gutakha chewing, smoking and aware of the harmful effects of tobacco. This result was close to the findings of study by Maan Surinder Singh²³, and Shruti Gupta et al²⁰ also reported the same.

In our study among all the groups maximum number of students think tongue cleaning is important which was similar to the result of Shruti Gupta et al Who reported that maximum students do believe that oral health is as important as general health.²⁰

Out of all three groups of students, maximum number of students are aware of term the 'halitosis' and the cause of bleeding gums and dental caries. This result was similar to the result of Mohammed Mohsin Aljrais et al (oral Dental Health Knowledge, Attitude and Practice among Dental and Pharmacy Students at Riyadh Elm University, KSA).²⁴

Maximum number of students strongly agree that sweets, sugary food and drinks can cause tooth decay. This result was similar to the result of Mohammed Mohsin Aljrais et al (oral Dental Health Knowledge, Attitude and Practice among Dental and Pharmacy Students at Riyadh Elm University, KSA).²⁴

Greater percentage were recorded in our study who strongly agree that using fluoride tooth paste strengthens teeth. This result was similar to the result of oral Dental Health Knowledge, Attitude and Practice among Dental and Pharmacy Students at Riyadh Elm University, KSA by Mohammed Mohsin Aljrais et al.²⁴

Maximum number of students in our study believed that oral health is as important as general health, this result was similar to the result of Shruti Gupta et al result.²⁰

Maximum number of participants believe that oral health is as important as general health and oral diseases can affect general health too. which was distinguishable to the findings of study by Shruti Gupta et al.²⁰

Among all participants maximum number of students concerned about their appearance and aesthetics of teeth. Our study was similar to the result of Mohamed Mekhemar et al³ and in contrast to the result of Shruti Gupta et al²⁰ study.

CONCLUSION

In this study, it was observed that oral hygiene practice score and knowledge score was greater in the group of interns followed by the group of clinical students and pre clinical group of students as year increases, knowledge score and oral hygiene practice score increases and knowledge increases, oral hygiene score increases. The attitude needs to be improved toward proper practicing of oral health measures and regular visit to dentist. The students should be provided with better encyclopedic dental education with early exposure to dental health and prevention.²⁰

REFERENCES:

1. Jin LJ, Lamster IB, Greenspan JS, Pitts NB, Scully C, Warnakulasuriya S. Global burden of oral diseases: emerging concepts, management and interplay with systemic health. *Oral Dis.* 2016;22(7):609–19.
2. Kumar H, Behura SS, Ramachandra S, Nishat R, Dash KC, Mohiddin G. Oral health knowledge, attitude, and practices among dental and medical students in eastern India - a comparative study. *J Int Soc Prev Community Dent.* 2017;7(1):58–63.
3. Glick M, Williams DM, Kleinman DV, Vujcic M, Watt RG, Weyant RJ. A new definition for oral health developed by the FDI world dental federation opens the door to a universal definition of oral health. *J Public Health Dent.* 2017;77(1):3–5.
4. Nazir MA. Prevalence of periodontal disease, its association with systemic diseases and prevention. *Int J Health Sci.* 2017;11(2):72–80.
5. Winning L, Linden GJ. Periodontitis and systemic disease: association or causality? *Current oral health reports.* 2017;4(1):1–7.

6. Chan S, Pasternak GM, West MJ. The place of periodontal examination and referral in general medicine. *Periodontology 2000*. 2017;74(1):194–9.
7. Le Bars P, Matamoros S, Montassier E, Le Vacon F, Potel G, Soueidan A, et al. The oral cavity microbiota: between health, oral disease, and cancers of the aerodigestive tract. *Can J Microbiol*. 2017;63(6):475–92.
8. Peker, I.; Alkurt, M.T. Oral Health Attitudes and Behavior among a Group of Turkish Dental Students. *Eur. J. Dent*. 2009, 3, 24–31.
9. Yildiz, S.; Doğan, B. Self Reported Dental Health Attitudes and Behaviour of Dental Students in Turkey. *Eur. J. Dent*. 2011, 5, 253–259.
10. 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 Jun;7(6):65-70.
11. Sharda AJ, Shetty S. A comparative study of oral health knowledge, attitude and behavior of first and final year dental students of Udaipur city, Rajasthan. *J Oral Health Community Dent* 2008;2:46-54.
12. Usman S, Bhat SS, Sargod SS. Oral health knowledge and behavior of clinical medical, dental and paramedical students in Mangalore. *J Oral Health Community Dent* 2007;1:46-8.
13. Mumtaz R, Khan AA. A comparative evaluation of oral health knowledge, attitudes and practices of dental and pharmacy students of Riphah international university. *Pak Oral Dent J* 2009;29:131-6.
14. Baseer MA, Alenazy MS, Alasqah M, Algabbani M, Mehkari A. Oral health knowledge, attitude and practices among health professionals in King Fahad medical city, Riyadh. *Dent Res J (Isfahan)* 2012;9:386-92.
15. Alas K, Al-Hawish A, Al-Khamis W. Oral hygiene practices, smoking habit, and self-perceived oral malodor among dental students. *J Contmp Dent Practices*, 2003;15,4:77-90.
16. Jain M, Ashok S, Gupta A, Saxena V, Jain M, Mhaske S, et al. Assessment of knowledge, behavior and attitude of assorted professionals in a university of central India towards preventive oral and dental care: A cross-sectional study. *J Community Health Manage* 2017;4:76-82.
1. 17. Aljrais MM, Ingle N, Assery MK. Oral-dental health knowledge, attitude and practice among dental and pharmacy students at Riyadh Elm University, KSA. *J Int Oral Health* 2018;10:198-205.
17. Emmanuel A, Chang'endo E. Oral health related behaviour, knowledge, attitudes and beliefs among secondary school students in Iringa municipality. *Dar Es Salaam Med Stud J*
2. 2010;17:24-30.
18. Chestnutt IG, Schäfer F, Jacobson AP, Stephen KW. The influence of toothbrushing frequency and post brushing rinsing on caries experience in a caries clinical trial. *Community Dent Oral Epidemiol* 1998;26:406-11.

19. Gupta S, Saxena S, Sikka N, Bhatia G. Oral health attitude, knowledge, and behaviour of dental students of Jaipur, Rajasthan: A comparative study. *J Indian Assoc Public Health Dent* 2015;13:459-64.
20. Asadoorian J. Position paper on tooth brushing. *CJDH* 2006;40:232-48.
21. Terézhalmy GT, Bartizek RD, Biesbrock AR. Relative plaque removal of three toothbrushes in a nine-period crossover study. *J Periodontol* 2005;76:2230-5.
22. Singh MS, Tuli AK. A comparative evaluation of oral hygiene practices, oral health status, and behavior between graduate and post graduate dentists of North India: An epidemiological survey. *J Int Soc Prev Community Dent* 2013;3:19-24.
23. Aljrais MM, Ingle N, Assery MK. Oral-dental health knowledge, attitude and practice among dental and pharmacy students at Riyadh Elm University, KSA. *J Int Oral Health* 2018;10:198-205.