Indian Journal of Clinical Anatomy and Physiology 2022;9(2):141–145

Content available at: https://www.ipinnovative.com/open-access-journals

Indian Journal of Clinical Anatomy and Physiology

Journal homepage: https://www.ijcap.org/

Original Research Article

A self-report on oral hygiene awareness among allied health students of Chennai – A cross-sectional study

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ARTICLE INFO

Article history:
Received 24-06-2022
Accepted 07-07-2022
Available online 15-07-2022

Keywords:
Dental visit
Oral health
Questionnaire
Tooth brushing

ABSTRACT

Introduction: Oral cavity is the mirror of general health. Good oral hygiene plays important role in the prevention of oral diseases. Hence, constant monitoring and evaluation of oral hygiene become promising leads for a general health checkup.

Aim: To evaluate the awareness for oral hygiene among Paramedical students of the south Indian population.

Materials and Methods: The study is a cross-sectional study involving 1003 students belonging to Allied health sciences studying in Dr. MGR Educational & Research Institute, Chennai, having mean Age of 18 -20 years. The study was conducted for a period of one month (14 August 2021- 10 September 2021). The subjects were asked to fill out a self-explanatory Questionnaire about their daily oral hygiene activities. The observations are tabulated and analyzed using SPSS software. Mean, frequency distribution and chi-square test were used as test of significance.

Results: The college students who filled the self-report were aged 18-19 years (88.7%) of which female students gave maximum responses (65.70%) in filling the questionnaires. The tested population brushed twice per day was on higher side (56%) with females having more brushing frequency (39.48%) as compared to males (16.3%). The respondents who noticed bad breadth and bleeding gums was 26.22% and 32.20% respectively. The values of bad breadth have p values with high significance (0.0005%) in comparison to gender. However, Gender comparison with dental floss usage (p = 0.1695) and dental visit observation (P= 0.4293) had no significant statistical P values.

Conclusion: Among the Allied Health students, the general knowledge of oral health practices was moderate and dental visits were their choice only during emergency procedures. Inadequate knowledge of routine dental procedures and signs of oral health were seen. Female students have better knowledge upon oral health, oral hygiene practices and maintenance as compared to males.

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1. Introduction

Health forms an important perspective of life. Good health is the key to human happiness and wellness that definitely contribute to the wealth and economic development of people as well as whole nation. Oral Health plays a significant role in general health.[1,2] According to the oral health organization," Oral health means being free of chronic mouth and facial pain, oral & throat cancer, oral sores, birth defects such as cleft lip and cleft palate, periodontal disease and tooth decay and tooth loss and other diseases and disorders that affect the mouth and oral cavity.[3]

Harmony of oral health and overall general health always goes hand in hand. Hence, creating awareness of oral hygiene among the public becomes of utmost importance. Dental plaque is the chief causative agent for dental caries and periodontal diseases. Plaque control plays a key role

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https://doi.org/10.18231/j.ijcap.2022.031
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in oral hygiene management.[4] Medical students and allied health students should have adequate knowledge of oral health and maintenance also as they work together to deliver primary health care as well as treat the most vulnerable patients. Hence, their role to teach the community about general health, as well as oral health, becomes a prime necessity in developing countries like India.

Various studies have been done to associate the oral hygiene status of health care professional college students.[5–9] Very few studies have been done among paramedical students regarding oral health which provoked us to do the current study.[7,10] There is a lacuna in the scientific literature about oral hygiene awareness among these students.

The aim of the study is to access the awareness of oral health among allied health students. The objective focuses to gather information on the knowledge of the students about tooth brushing, their frequency, gingival health, and their interest in dental routine checkups. The information gathered can be assessed to know the basic understanding of oral hygiene and its related diseases.

2. Materials and Methods

A cross-sectional study was conducted in Dr. MGR Educational & Research Institute, Chennai on a group of students studying allied health sciences for a period of one month (14 August 2021-10 September 2021). Informed consent was got from the students prior to conducting the survey. Institutional ethical clearance (No.251/2021 IEC/ACSMCH Dt.10.08.2021) was obtained.

2.1. Inclusion criteria

Healthy Students studying the first year in allied health sciences, having a mean age of 20 years.

2.2. Exclusion criteria

Students aged more than 20 years, having systemic diseases and also those who provided incomplete data in the questionnaire survey were exempted from the survey.

2.3. Sample size

The sample size was calculated using the below formula.

Sample size = Reliability coefficient ^2 × prevalence or variance / precision ^2.

The power of the study was 80% and the prevalence was around 50%.[11]

2.4. Questionnaire design

A self-administered, structured questionnaire was designed using google forms and posted to 1010 students. The questionnaire consisted of 19 questions. The questions focused on demographic data, oral hygiene measures, brushing habits, and the health of gingiva including dental visits.

2.5. Statistical analysis

The observations are tabulated and analyzed using IBM SPSS statistics. 25.0 (IBM, Armonk, NY, USA). The chi-square test was conducted to evaluate the attitude and knowledge of students with oral health.

3. Results

The total number of students who participated was 1003, of which 659 (65.7%) were females and 344 (34.3%) were males whose age group ranged between 17-19 years. The descriptive statistics featuring various factors influencing oral hygiene are shown in Table 1.

Among the total respondents, about 989 (98.6%) students were using toothbrushes and toothpaste for brushing. Participants when questioned about the duration of brushing, more responses were for those brushing for two minutes- 412 (41.08%), while other responses were 399 (39.78%) for more than two minutes, 165 (16.45%) for one minute and 27(2.69%) brushed less than one minute. The percentage of students who change their brush every three months, six months, and one year were 787 (78.6%), 190 (18.94%), and 26 (2.59%) respectively. The number of students who used toothbrushes with medium bristles was high around 507(50.5%) as compared to the usage of toothbrushes with soft bristles was 325 (32.40%) & with Hard bristles was 38 (3.79%). The students reported that the purpose of cleaning teeth was to prevent dental diseases around 727 (72.48%) as compared to other causes. The number of respondents who believed bleeding gums can be prevented by using mouth wash was 361 (35.99%), using toothbrushes was 121 (12.06%), eating soft foods was 80 (7.89%), and the remaining students 183(18.25%) were totally unaware about the condition. Most of the student population around 894 (89.13%) have not used dental auxiliaries like dental floss. Routine dental visits were performed only for 386(38.4%) of which females (54.32%) visited more frequently as compared to males (37.20%) (Table 2). The respondents Who have not noticed bad breadth was 740 (73.78%) and there was minimal usage of mouthwash with students showing 33.7% (338).

Relationship between gender and various factors affecting oral health:

Out of the total participants, 559(55.9%) brushed their teeth twice daily. Among them, 396(39.6%) were females and only 163 (16.3%) were males. The results were statistically significant with P-Value = 0.0005 as shown in Table 3.

Among the respondents, 740 (74.0%) never noticed bad breadth, and among those who observed bad breadth were 263 (26.3%). The gender distribution suggests more females

Table 1: Distribution of responses

Question	Response	Count	Percentage
Do you recommend your parents/relatives to visit dentist?	No	361	35.99%
	Yes	642	64.01%
Do you rinse your mouth after eating?	No	165	16.45%
	Yes	838	83.55%
Do you use dental floss?	No	894	89.13%
	Yes	109	10.87%
Do you use mouthwash?	No	665	66.30%
	Yes	338	33.70%
Do you visit a dentist?	No	617	61.52%
	Yes, for general check up	216	21.54%
	Yes, for tooth pain	170	16.95%
Do you want your teeth get cleaned?	No	158	15.75%
	Yes	845	84.25%
Have you ever noticed bad breath?	No	740	73.78%
	Yes	263	26.22%
Have you ever noticed bleeding in your gums?	No	680	67.80%
	Yes	323	32.20%
How can we prevent bleeding gums?	Avoid cleaning of teeth	11	1.10%
	Cleaning teeth using mouth wash	361	35.99%
	Eating soft food	80	7.98%
	I dont know	183	18.25%
	Others	184	18.34%
How do you clean your teeth?	Using tooth brush	121	12.06%
	Using tooth paste	63	6.28%
	Brush and paste	989	98.60%
	Brush and powder	14	1.40%
How do you clean your tongue?	No	126	12.56%
	Tongue cleaning aids	323	32.20%
	Tooth brush	554	55.23%
How long do you brush your teeth time interval?	1 minute	165	16.45%
	2 minutes	412	41.08%
	Less than 1 minute	27	2.69%
	More than 2 minutes	399	39.78%
Questions	Response	Count	Percentage
How often do you change your brush?	3 months	787	78.46%
	6 months	190	18.94%
	One year	26	2.59%
How often do you clean your teeth per day?	Once	444	44.27%
	Twice	559	55.73%
What is the purpose of cleaning of teeth?	I dont know	45	4.49%
	Others	52	5.18%
	To prevent bad breadth	103	10.27%
	To prevent bleeding of gums	76	7.58%
	To prevent dental disease	727	72.48%
What type of brush do you use?	Hard	38	3.79%
	Medium	507	50.55%
	Never noticed	133	13.26%
	Soft	325	32.40%

Table 2: Gender vs visit a dentist

Gender	Visit a dentist			Grand Total
	No	Yes, for general check-up	Yes, for tooth pain	
Female	401 (39.9%)	139 (13.8%)	119 (11.8%)	659(65.7%)
Male	216 (21.8%)	77 (7%)	51(5%)	344 (34.4%)
Grand Total	617(61.5%)	216(21.5%)	170(16.9%)	1003

Table 3: Gender vs brushing frequency- chi-square test

Gender	Brushing frequency		Grand total	P-value	Inference
	Once	Twice			
Female	263 (26.3)	396 (39.6%)	659 (65.7%)	0.0005	Significantly Associated
Male	181 (18.1%)	163 (16.3%)	344 (34.4%)		
Grand Total	444 (44.2%)	559 (55.7%)	1003		

Table 4: Gender vs bad breath - chi-square test

Gender	Bad breath		Grand total	P-value	Inference
	No	Yes			
Female	507 (50.5%)	152 (15.15%)	659 (65.7%)	0.0025	Significantly Associated
Male	233 (23.2%)	111 (11.06%)	344 (34.4%)		
Grand Total	740 (74.0%)	263 (26.3%)	1003 (100)		

around 507 (50.7%) have not experienced bad breadth as compared to males around 233 (23.3%). The results were statistically significant with p-value = 0.00025 as shown in Table 4.

4. Discussion

Good oral hygiene measures play a key role in oral health.[3] Oral health is an important component of general health.[10] poor oral hygiene measures will drastically affect the general well-being of the individual, wherein some medical diseases have a negative effect on the oral cavity and related structures.[12] In developing nations, there is a rise in oral diseases and adequate focus has to be given to oral health.[11–13]

In this study, most of the participants (98.6%) used toothbrush and toothpaste for cleaning their tooth. Umanah AU et al, Olusile AO et al[3,14] had observed similar findings; although, A study in Nepal by Yadav had fewer respondents for toothbrush usage (28.9%) while the remaining were using tooth powder was 34.8%.[13] Our clinical findings suggest that the students are more aware of currently available tools for brushing through education & media.

In the current study, participants were not using mouth wash about 665 (66.3%) and dental floss about 894 (89.1%). These results are in accordance with earlier studies by Neamatollahi H et al, Stenberg P et al & Zhao Q et al.[7,8,15] Regarding the frequency of tooth brushing, the present study showed more respondents brushed twice or more per day (80%) whose results are similar to Neamatollahi H et al, Davies RM et al, Khami MR et al.[7–9]

Toothbrushes worn out upon brushing have to be changed at regular intervals. In the earlier study done by Rimondini L et al, 81.6% of respondents changed their toothbrushes every three months, which surprisingly coincides with our study showing 78.46%.[16] However, the observations are contradicted by studies of Tan E & Sforza NM et al.[17,18]

Halitosis or Bad breadth is one of the common dental problems frequently encountered. Although Various reasons can be suggested, the most common was plaque accumulation and improper brushing.[7] In the present study, most of the respondents have never complained of bad breadth (73.78%). Gender inclination highly corresponds with terrible breadth, with females experiencing good breadth for most of the day (50.7%) compared to males (23.3%), and the findings are statistically significant. More comparable findings of bad breadth were observed with Orenuga OO et al, Ogunro PS et al. & Iqbal MZ et al.[19–21] These results suggest Females have increased awareness and provide better care for oral health. In the current study, knowledge of gingival health was assessed with the evaluation of bleeding gums. Most respondents had found their gingiva as healthy and never noticed bleeding gums (67.8%) which had no correlation with gender. Yazdani et al findings were coinciding with this study.[22]

Our study suggests that dental behavior was influenced by gender. Education and media also plays important role in influencing the oral health of the individual.[23] The overall attitude and knowledge about oral hygiene were good for females than males.

The current survey has its strength in its large sample size and was done under detailed self-explanatory questionnaires.

5. Limitations

This study has its own limitations. The results are skewed by the large strength of the female population, all inputs are self-reported. Such a study may project potential bias. Moreover, the findings are not confirmed through physical examination by dentists.

6. Conclusion

This study concludes that the overall behavior of Allied health students towards oral hygiene is less and adequate knowledge has to be gained to meet the current demands. Continuous reinforcement upon dental education through camps to be done so as to aid dental care and know advancement in the field. Oral education and adequate training in preventive measures through community-based health strategies must be ensured to improve periodontal health.

7. Source of Funding

Nil.

8. Conflict of Interest

Nil.

Acknowledgments

We express thanks to all Allied health students of Dr. MGR Educational & Research Institute, Chennai for their active participation and support.

References

1. Kumar S. Oral hygiene awareness among two non-professional college students in Chennai, India-A pilot study. *Oral Hygiene*. 2012;5:31–6.
2. Al-Rifaai JM, Haddad AMA, Qasem JA. Personal hygiene among college students in Kuwait: A Health promotion perspective. *J Educ Health Promot*. 2018;7:92. doi:10.4103/jehp.jehp_158_17.
3. Umanah AU, Braimoh OB. Oral hygiene practices and factors influencing the choice of oral hygiene materials among undergraduate students at the University of Port Harcourt, Rivers State, Nigeria. *J Dent Allied Sci*. 2017;6(1):3.
4. Al-Batayneh OB, Owais AI, Khader YS. Oral health knowledge and practices among diverse university students with access to free dental care: A cross-sectional study. *Open J Stomatol*. 2014;4(3). doi:10.4236/ojst.2014.43021.
5. Darout IA. Knowledge and behavior related to oral health among Jimma University Health Sciences students. *Eur J Gen Dent*. 2014;3(3):185–9.
6. Kawamura M, Ikeda-Nakaoka Y, Sasahara H. An assessment of oral self-care level among Japanese dental hygiene students and general nursing students using the Hiroshima University-Dental Behavioural Inventory (HU-DBI): Surveys in 1990/1999. *Eur J Dent Educ*. 2000;4(2):82–8.
7. Neamatollahi H, Ebrahimi M. Oral health behavior and its determinants in a group of Iranian students. *Indian J Dent Res*. 2010;21(1):84–8.
8. Stenberg P, Håkansson J, Åkerman S. Attitudes to dental health and care among 20 to 25-year-old Swedes: results from a questionnaire. *Acta Odontol Scand*. 2000;58(3):102–6.
9. Khami MR, Virtanen JI, Jafarian M, Murtomaa H. Oral health behaviour and its determinants amongst Iranian dental students. *Eur J Dent Educ*. 2007;11(1):42–7.
10. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century-the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*. 2003;31(Suppl 1):3–23.
11. Skaret E, Espelid I, Skeie MS, Haugejorden O. Parental beliefs and attitudes towards child caries prevention: assessing consistency and validity in a longitudinal design. *BMC Oral Health*. 2008;8(1):1–8.
12. Radha G, Ali KS, Pushpanjali K. Knowledge, attitude and practice of oral health among nursing staff and nursing students of Bangalore city. *J Indian Assoc Public Health Dent*. 2008;6(11):17–21.
13. Yadav K, Prakash S. Knowledge, attitude and practice on dental caries and oral hygiene among medical students at Janaki medical college teaching hospital. *Int J Med Biomed Sci*. 2016;1(2):22–31.
14. Olusile AO, Adeniyi AA, Orebanjo O. Self-rated oral health status, oral health service utilization, and oral hygiene practices among adult Nigerians. *BMC Oral Health*. 2014;14:140.
15. Zhao Q, Wang SB, Xu G, Song Y, Han X, Liu Z, et al. Periodontal health: A national cross-sectional study of knowledge, attitudes and practices for the public oral health strategy in China. *J Clin Periodontol*. 2019;46(4):406–19.
16. Rimondini L, Zolfanelli B, Bernardi F, Bez C. Self-preventive oral behavior in an Italian university student population. *J Clin Periodontol*. 2001;28(3):207–11.
17. Tan E, Daly C. Comparison of new and 3-month-old toothbrushes in plaque removal. *J Clin Periodontol*. 2002;29(7):645–50.
18. Sforza NM, Rimondini L, Menna FD, Camorali C. Plaque removal by worn toothbrush. *J Clin Periodontol*. 2000;27(3):212–6.
19. Orenuga OO, Sofola OO. A survey of the knowledge, attitude and practices of antenatal mothers in Lagos, Nigeria about the primary teeth. *Afr J Med Med Sci*. 2005;34(3):285–91.
20. Ogunro PS, Egbewale BE, Adeeyo OA, Olowu AO, Adeoti ML, Adewole TA. Assessment of preventive oral health knowledge and practices among rural and urban mothers in Lagos state. *Niger Postgrad Med J*. 2009;16(4):239–44.
21. Iqbal MZ, Omar K, Ali AN, Bahari MB, Iqbal MS. Sociodemographic correlates of practice towards oral hygiene among university students: A cross-sectional insight. *Int J Pharm Investig*. 2020;10(3):402–6.
22. Yazdani R, Vehkalahti MM, Nouri M, Murtomaa H. Validity of self-assessment of oral health among 15-year-olds in Tehran, Iran. *Oral Health Prev Dent*. 2008;6(4):263–9.
23. Kassak KM, Dagher R, Doughan B. Oral hygiene and lifestyle correlates among new undergraduate university students in Lebanon. *J Am Coll Health*. 2001;50(1):15–20.

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Cite this article: Jayakumar K, Ebenraj J, Elairajan S. A self-report on oral hygiene awareness among allied health students of Chennai – A cross-sectional study. *Indian J Clin Anat Physiol* 2022;9(2):141-145.