



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2019; 5(2): 494-498
© 2019 IJADS
www.oraljournal.com
Received: 24-02-2019
Accepted: 26-03-2019

Jawahir Ahmad Ganai
MDS, Department of
Periodontics, Government
Dental College, Srinagar, Jammu
and Kashmir, India

Suhail Majid Jan
Professor and Head of
Department of Periodontics,
Government Dental College,
Srinagar, Jammu and Kashmir,
India

Roobal Behal
Associate Professor, Government
Dental College, Srinagar, Jammu
and Kashmir, India

Falak Naz
Department of Prosthodontics,
Crown & Bridge, Government
Dental College, Srinagar, Jammu
and Kashmir, India

Correspondence
Jawahir Ahmad Ganai
MDS, Department of
Periodontics, Government
Dental College, Srinagar, Jammu
and Kashmir, India

Evaluation of oral-hygiene awareness and practice among dental students

Jawahir Ahmad Ganai, Suhail Majid Jan, Roobal Behal and Falak Naz

Abstract

Aim: The aim of this study is to compare oral-health knowledge, attitudes, and self-care practice behaviors among dental students.

Materials and Methods: A questionnaire was prepared regarding oral-health attitudes and behaviors. The survey was carried out at Government Dental College and Hospital, Kashmir India. Three hundred sixty-seven questionnaires were responded by the dental students (208 clinical and 159 preclinical students). The data were tabulated and analyzed by using Statistical Package for the Social Sciences (SPSS) v.17.0. Chi-square tests were also used.

Results: A more significant knowledge ($P < 0.001$) of oral-hygiene procedures are noticed in clinical students than in preclinical students. The responses varied mainly regarding the type of brush they are using, the brushing technique, motivating people to consult a dentist (clinical — 95.2%, preclinical— 78%), and educate people about oral hygiene procedures (clinical — 98.6%, preclinical — 80.5%). oral hygiene practices in different genders were not included in the present study.

Conclusion: The outcome of the study is that there is an appreciably high level of knowledge about oral self-care procedures in clinical students than in preclinical undergraduate dental students. There is a need to educate the undergraduate dental students on oral care procedures as soon as they join the BDS course.

Keywords: Attitudes, dental education, dental students, oral health behavior

Introduction

The prevention of oral disease is the most acknowledged and efficient method of ensuring oral health^[1]. Oral health is now renowned to be equally important in relation to general health^[2]. Written and visual media and dentists are the most common sources of receiving oral health information^[3,4]. To redirect the focus of oral-health professionals toward effective preventive interventions and to enable them to motivate their patients to adopt healthy behaviors, special educational programs need to be integrated into undergraduate training and made available to established clinicians are required^[5-10]. Dental students, the future leaders in oral-healthcare, have a significant role to play in public oral health education and its promotion^[11-13]. Dental students in general have been found to have a positive oral health attitude but their own oralhealth behavior must improve if they are to serve as positive models for their patients, families, and friends^[8,14-17]. Dental students' oral-health attitude reflects their understanding of the importance of disease prevention and their commitment to improve their patients' oral health; these attitude should be developed and reinforced during undergraduate training^[14]. Previous studies on dental students, which mostly majored on the comparison of the first and advanced years of education, showed that final year dental students had significant improvements in oral-hygiene practices, attitudes, and behavior^[18-22]. To the best of our knowledge, there are very few studies comparing preclinical and clinical students reporting inconsistent results^[7,16]. The aim of this study was to evaluate the difference between the oral-hygiene procedures and oral health awareness of the pre-clinical and clinical undergraduate dental students.

Materials and methods

Before conducting a full-scale survey, a 17-item questionnaire was administered to a population of 50 subjects for pretesting. The main cross-sectional study was conducted at Government Dental College and Hospital, Srinagar, J&K, with the preclinical

(1st and 2nd year) and clinical (3rd and 4th year students and interns) undergraduate dental students with 90% power. The study was approved by institutional ethical committee. A self-constructed 17-item close-ended questionnaire [Table 1] was distributed among all the students. The questionnaire included questions related to the age, gender, year of study. It was further categorized to evaluate the knowledge, practices, and behavior pattern related to oral health. Before the distribution of questionnaire, an informed consent was taken from all the participants. Each subject was given 5-10 mins time for completing the questionnaire. The questionnaires were collected immediately after the completion.

Inclusion criteria

Preclinical students - 1st and 2nd year students
 Clinical students-3rd and 4th year students and interns.

Exclusion criteria

Students who are not willing to participate in the study. The data were tabulated and analyzed using Statistical Package for the Social Sciences (SPSS) v.17.0 (SPSSInc., Chicago, IL). Chi-square test was also used to compare the oral-health attitudes and behavior of the preclinical and clinical undergraduate dental students. A *P*-value of less than 0.05 was considered statistically significant, and a *P*-value of less than 0.001 was considered strongly significant.

Results

A total of 367 students from both preclinical and clinical years participated in the study. All the questionnaires were returned after the completion and were analyzed.

Table 1: Questionnaire form

Questions	Responses
How do you clean your teeth?	Brush & paste/Brush & powder
How often do you clean your teeth?	Once/Twice
What type of brush do you use?	Hard/soft/medium/never noticed
Brushing technique?	Horizontal/vertical/circular/bass
How often do you change your brush?	3 months/6months
Do you know what interdental aids are?	Yes/no
Do you use dental floss?	Yes/no
Do you clean your tongue?	Yes/no
If yes, with what aids?	Tooth brush/tongue cleaning aids
Do you rinse your mouth after eating?	Yes/no
Do you use mouthwash?	Yes/no
Have you ever noticed bleeding in your gums?	Yes/no
Have you ever noticed bad breath?	Yes/no
Do you visit a dentist?	General visit/tooth pain
Do you want your teeth get cleaned?	Yes/no
Do you recommend your parents/relatives to dentist?	Yes/no
Do you educate people about oral hygiene procedures ?	Yes/no

The sample description of both preclinical and clinical undergraduate dental students is given in Table 2. The percentages of responses given by both the preclinical and clinical students are presented in Table 3. No significant differences were observed between the preclinical and clinical students regarding the following data: Frequency of brushing (Q2), frequency of changing brush (Q5), cleaning the tongue with a tooth brush/ tongue cleaner (Q9), using a mouthwash

(Q11), having bleeding gums (Q12), wants their teeth cleaned (Q15) [Table 3], and type of brush they use (Q3) [Table 4].

Table 2: Sample Description

Category	Male%	Female%	Total%
Preclinical	25(15.7)	134(84.2)	159(100)
Clinical	40(19.2)	168(80.7)	208(100)
Total	65	302	367

Table 3: Percentage And Analysis Of Responses In Preclinical And Clinical Students

Q no.	Category	Brushing	Frequency	Total	p-value
1.	Preclinical clinical	Tooth paste 159 (100) 208 (100)		159 (100) 208 (100)	
2.	Preclinical clinical	Once 87 (54.7) 109 (52.4)	Twice 72 (45.2) 99 (47.4)	159 (100) 208 (100)	0.66
5.	Preclinical clinical	3 months 120 (75.4) 163 (78.3)	6 months 39 (24.5) 45 (21.6)	159 (100) 208 (100)	0.72
6.	Preclinical clinical	Yes 29 (18.2) 175 (84.1)	No 130 (81.8) 33 (15.9)	159 (100) 208 (100)	<0.01
7.	Preclinical clinical	Yes 84 (52.8) 148 (71.1)	No 75 (47.1) 60 (28.8)	159 (100) 208 (100)	<0.01
8.	Preclinical clinical	Yes 143 (89.9) 155 (74.5)	No 16 (10.0) 53 (25.4)	159 (100) 208 (100)	<0.01
9.	Preclinical clinical	Brush 68 (42.7)	T. Cleaner 91 (57.2)	159 (100) 208 (100)	0.93

		88 (42.3)	120 (57.6)		
10.	Preclinical clinical	Yes 137 (86.2) 167 (80.3)	No 22 (13.8) 41 (19.7)	159 (100) 208 (100)	0.13
11.	Preclinical clinical	Yes 49 (30.8) 64 (30.8)	No 110 (69.2) 144 (69.2)	159 (100) 208 (100)	0.99
12.	Preclinical clinical	Yes 42 (26.4) 50 (24.0)	No 117 (73.6) 158 (76.0)	159 (100) 208 (100)	0.60
13.	Preclinical clinical	Yes 33 (20.8) 34 (16.3)	No 126 (79.2) 174 (83.7)	159 (100) 208 (100)	0.27
14.	Preclinical clinical	Tooth Pain 116 (72.9) 86 (41.3)	G. Visit 43 (27.0) 122 (58.6)	159 (100) 208 (100)	<0.01
15.	Preclinical clinical	Yes 100 (62.9) 129 (62.0)	No 59 (37.1) 79 (38.0)	159 (100) 208 (100)	0.86
16.	Preclinical clinical	Yes 124 (78.0) 198 (95.2)	No 35 (22.0) 10 (4.8)	159 (100) 208 (100)	<0.01
17.	Preclinical clinical	Yes 128 (80.5) 205 (98.6)	No 31 (19.5) 3 (1.4)	159 (100) 208 (100)	<0.01

P-value of <0.05 is significant and that of <0.001 is strongly significant

Table 4: Percentage and Analysis of Responses In Preclinical And Clinical Students

Q no.						Total	p-value
1.	Preclinical clinical	Hard 5(3.1) 8(3.8)	Medium 82(50.9) 108(51.9)	Soft 60(37.7) 86(41.3)	Never 12(7.5) 6(2.8)	159(100) 208(100)	0.22
2.	Preclinical Clinical	17(10.6) 88(42.3)	36(22.6) 41(19.7)	45(28.3) 28(13.4)	61(38.3) 51(24.5)	159(100) 208(100)	<0.01

P-value of <0.05 is significant and that of <0.001 is strongly significant

Strongly significant differences ($P < 0.001$) were found between the preclinical and clinical students with regards to the brushing technique they use (Q4) [Table 4], knowledge regarding interdental aids (Q6), use of dental floss (Q7), tongue cleaning (Q8), visiting a dentist (Q14), recommending parents/relatives to dentist (Q16), and educating the people about oralhygiene procedures (Q17) [Table 3].

Discussion

As a major part of their role in the oral-health-care provision, dentists are considered experts in the field of oral-health education and promotion. The first step in establishing a positive oral-health habit is to provide significant knowledge to the patients and to raise their awareness regarding the ways to prevent oral diseases. High awareness regarding oral self-care among dental students enables them to assess their patients' oral health condition and to motivate their patients and may help them to spread oral awareness in the general population [12, 13, 17]. The results of the present study indicated that the percentage score for oral-health knowledge, attitude, and behavior of clinical students were significantly higher than that of the preclinical students, which agrees with the results of some previous studies by Kawamura *et al.*, [23] Tseveenjav *et al.*, [5] and Rong *et al.* [21]. Preventive dentistry and periodontology are taught in the 3rd year of dental studies, so the difference in the knowledge, attitude, and behavior percentages of preclinical and clinical dental students appears to reflect the variation in the student's educational level. In the present study, all the preclinical and clinical students used tooth brush and tooth paste as they are better informed about the effectiveness of the mechanical

removal of dental plaque and the secondary role of the tooth paste in the prevention of gum diseases, which is in accordance with the study by Polychronopoulou *et al.* [24]. No significant difference was found in the frequency of tooth brushing behavior between the pre-clinical and clinical students, unlike the finding of a study by Barrieshi- Nusair *et al.*, [7] which showed that the percentage of students claiming to brush their teeth twice daily or more often was four times higher among the clinical students than that among the preclinical students. This suggests that the level of student's self-care may have been influenced by their course contents. There is a strongly statistical significance difference between preclinical and clinical students regarding the brushing technique ($P < 0.001$) [Table 4], mainly regarding the bass technique (circular/roll — 22.6%, horizontal/scrub — 28.3%). The rate of the usage of dental floss among the preclinical students was 52.8% and among the clinical students was 71.1% ($P < 0.001$) [Table 3]. Gender difference in the usage of dental floss is not considered in the study. These rates are higher than the results obtained by Neeraja *et al.* [25] (1st year — 22%, 5th year — 14%). In a similar study by Yildiz *et al.*, the rate of the usage of dental floss among preclinical students was 19% and among the clinical students was 31%. [26] In another study by Rong *et al.*, 4% of the 1st year students and 22% of the 5th year students used dental floss at least once in a week. [21] This can be explained by the fact that the basic course in clinical periodontology starts in the 3rd year. There was a strongly statistical significance between the preclinical and clinical students regarding the knowledge on interdental aids ($P < 0.001$) [Table 3]. The tongue cleaning behavior is better in preclinical students than in clinical students ($P <$

0.001). This observation differs from Sharada *et al.* [22] this could be explained, that the effect of factors other than knowledge, like, beliefs, values, attitudes, influence of family members and friends on the oral health behaviors more in preclinical students than in clinical students. There was no statistically significant difference in the use of mouthwash between the clinical and preclinical students, and also no significant difference regarding bad breath among the preclinical and clinical students, which was same as the findings of Barrieshi-Nusair *et al.* [7] The preclinical dental students were more concerned about bad breath than the clinical students in our study, which is in accordance with the results of Dumitrescu *et al.* [27] Our results also shows that 26.4% of preclinical students and 24% of clinical students [Table 3] had bleeding gums which was in higher proportion than found among, Japanese (45%) dental students and lower proportion found among Finnish (25%) dental students.[23] These rates are higher in clinical students when compared to the preclinical student as per the research by Neeraja *et al.* [25] (preclinical — 16% and clinical — 32%). This showed that the students in this study paid good attention to their oral-hygiene maintenance, and were also very much concerned about their dental esthetics. The results of the present study also found a statistically significant difference ($P < 0.01$) suggesting pre clinical students visit a dentist much frequently than clinical students when toothache occurs. The results also revealed that there was significant difference among the preclinical and clinical students in recommending their parents/relatives to dentist ($P < 0.001$), and in educating people about oral-hygiene procedures ($P < 0.001$). This improvement in personal oral-health behaviors among dental students has been shown to be linked with their dental education experience. Differences in the age in self -oral care was not reported in the present study. This is in accordance with previous studies by Komabayashi *et al.*, [18] and Tseveenjav *et al.*, [28] Gender difference has not been reported in the present study While significant gender differences existed in the use of recommended oral-health self-care in studies by Khami *et al.*, [29] and Al-Omari. [30] All study participants were dental students thereby reducing the probability of bias related to misconceptions and errors in interpretation of concepts that exist in studies using self-administered questionnaires with lay populations. However, there might be certain amount of measurement error in handling self-care reported in the present study instead of observed behaviors.

Limitations

1. Screening of intraoral clinical status of the study participants was not done.
2. The tendency toward socially desirable response cannot be completely excluded especially when using a self-assessment tool.

This study is limited with a questionnaire. To research the effect of education, cross-sectional and longitudinal comparisons would be more useful. Clinical examination besides questionnaire would probably affirm the results.

Conclusion

The findings of present study highlights that the students had rather low oral-health awareness in the beginning of their dental education, i.e., preclinical students has low oral-health awareness when compared to clinical students. The oral-health attitude and behavior of dental students improved with

the increase in the level of education. Further clinical studies are needed for determining the correlation between the self-report and the intraoral clinical status of dental students.

References

1. Dharmashree S, Chandu GN, Shafiulla N. Knowledge, attitude and practices (KAP) towards oral health among professional attending to the mentally disable children in Davangere, Karnataka, India. *J Ind Assoc Pub Health Dent.* 2005; 6:5-8.
2. Dilip CL. Health status, treatment requirements, knowledge and attitude towards oral health of police recruits in Karnataka. *J Ind Assoc Pub Health Dent* 2005; 5:20-1.
3. Lin HC, Wong MC, Wang ZJ, Lo EC. Oral health knowledge, attitudes, and practices of Chinese adults. *J Dent Res.* 2001; 80:1466-70.
4. Paik DI, Moon HS, Horowitz AM, Gift HC, Jeong KL, Suh SS. Knowledge of and practices related to caries prevention among Koreans. *J Public Health Dent.* 1994; 54:205-10.
5. Tseveenjav B, Vehkalahti M, Murtomaa H. Time and cohort changes in preventive practice among Mongolian dental students. *Eur J Dent Educ.* 2003; 7:177-81.
6. Autio-Gold JT, Tomar SL. Dental students' opinions and knowledge about caries management and prevention. *J Dent Educ.* 2008; 72:26-32.
7. Barrieshi-Nusair K, Alomari Q, Said K. Dental health attitudes and behaviour among dental students in Jordan. *Community Dent Health.* 2006; 23:147-51.
8. Umsan S, Bhat SS, Sargod SS. Oral health knowledge and behavior of clinical medical, dental and paramedical students in Mangalore. *J Oral Health Comm Dent.* 2007; 1:46-8.
9. Wagner JA, Redford-Badwal D. Dental students' beliefs about culture in patient care: Self-reported knowledge and importance. *J Dent Educ.* 2008; 72:571-6.
10. Porat D, Kawamura M, Eli I. Effect of professional training on dental health attitudes of Israeli dental students. *Refuat Hapeh Vehashinayim (1993)* 2001; 18:51-6, 63.
11. Khami MR, Virtanen JI, Jafarian M, Murtomaa H. Prevention oriented practice of Iranian senior dental students. *Eur J Dent Educ.* 2007; 11:48-53.
12. Gallagher EB, Moody PM. Dentists and the oral health behavior of patients: A sociological perspective. *J Behav Med.* 1981; 4:283-95.
13. Frazier PJ. Public health education and promotion for caries prevention: The role of dental schools. *J Public Health Dent.* 1983; 43:28-42.
14. Peker K, Uysal O, Bermek G. Dental training and changes in oral health attitudes and behaviors in Istanbul dental students. *J Dent Educ.* 2011; 74:1017-23.
15. Al-Omari QD, Hamasha AA. Gender-specific oral health attitudes and behaviour among dental students in Jordan. *J Contemp Dent Pract.* 2005; 6:107-14.
16. Dagli RJ, Tadakamadla S, Dhanni C, Duraiswamy P, Kulkarni S. Self-reported dental health attitude and behaviour of dental students in India. *J Oral Sci.* 2008; 50:267-72.
17. Freeman R. The psychology of dental patient care. 5. The determinants of dental health attitudes and behaviours. *Br Dent J.* 1999; 187:15-8.
18. Komabayashi T, Kwan SY, Hu DY, Kajiwara K, Sasahara H, Kawamura M. A comparative study of oral

- health attitudes and behaviour using the Hiroshima University - Dental Behavioural Inventory (HU-DBI) between dental students in Britain and China. *J Oral Sci.* 2005; 47:1-7.
19. Peker I, Alkurt MT. Oral health attitudes and behaviour among a group of Turkish dental students. *Eur J Dent.* 2009; 3:24-31.
 20. Doğan B, Filizi K, Küçükdoğan Ü. Gender-specific oral health attitudes and behaviour among dental students. *GÜ Diş Hek Fak Derg.* 2009; 26:87-93.
 21. Rong WS, Wang WJ, Yip HK. Attitudes of dental and medical students in their first and final years of undergraduate study to oral health behavior. *Eur J Dent Educ.* 2006; 10:178-84.
 22. 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, India. *Int J Dent Hyg.* 2008; 6:347-53.
 23. Kawamura M, Honkala E, Widström E, Komabayashi T. Cross-cultural differences of self-reported oral health behavior in Japanese and Finnish dental students. *Int Dent J.* 2000; 50:46-50.
 24. Polychronopoulou A, Kawamura M. Oral self-care behaviours: Comparing Greek and Japanese dental students. *Eur J Dent Educ.* 200; 9:164-70.
 25. Neeraja R, Kayalvizhi G, Sangeetha P. Oral health attitudes and behavior among a group of dental students in Bangalore, India. *Eur J Dent.* 2011; 5:163-7.
 26. Yildiz S, Dogan B. Self-reported dental health attitudes and behavior of dental students in Turkey. *Eur J Dent* 2011; 5:253-9.
 27. Dumitrescu AL, Kawamura M, Sasahara H. An assessment of oral self-care among Romanian dental students using the Hiroshima University — Dental Behavioural Inventory. *Oral Health Prev Dent* 2007; 5:95-100.
 28. Tseveenjav B, Vehkalahti M, Murtomaa H. Oral health and its determinants among Mongolian dentists. *Acta Odontol Scand.* 2004; 62:1-6.
 29. Khami MR, Virtanen JI, Jafarian M, Murtomaa H. Oral health behaviour and its determinants amongst Iranian dental students. *Eur J Dent Educ.* 2007; 11:42-7.
 30. Al-Omiri MK, Barghout NH, Shaweesh AI, Malkawi Z. Level of education and gender-specific self-reported oral health behavior among dental students. *Oral Health Prev Dent.* 2012; 10:29-35.