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Oral Health Awareness among Dental Students and Internees: A Questionnaire-based Study

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ABSTRACT

Introduction: Better knowledge and awareness of oral health practices are linked to good habits with healthier oral cavity. Awareness of periodontal health among dental students reflects their understanding of preventive dental care.

Objective: The present study aimed to assess the oral health awareness across the academic levels of undergraduate dental students and internees.

Methods: It was a descriptive cross-sectional, observational study on dental students of each academic year and internees of People's Dental College and Hospital, Nepal. The survey was done using census method from 2018 September to 2019 February using a self-administered structured questionnaire written in English. The results were compared between the subgroups of each academic year and internees.

Results: A total of 281 students (248 students from first year to fourth year BDS and 33 internees) participated in the study. Most of the students responded positively on periodontal disease causing mouth odour. Most of the first-year students did not know mobile teeth (35, 71.42%) and periodontal pockets (39, 79.83%) as signs of periodontal disease. Regarding the use of dental floss, 47 (95.91%) of first-year students do not use dental floss, and only 22 (66.67%) internees use dental floss. The majority of students know that smoking and diabetes as risk factors for oral diseases. The tongue-cleaning habit was seen almost the same in all groups of students. The first-year students (36, 73.46%) to fourth-year second phase students (65, 97.02%) and 33 (100%) internees have understood the importance of maintenance therapy.

Conclusions: The oral health awareness increased according to the academic growth among dental students and internees based on their behaviour and attitude.

Keywords: Dental students; oral health awareness; oral health knowledge; oral health practice.

INTRODUCTION

Oral health is an important aspect of general health and well-being.[1] The routine oral hygiene practices are considered as the effective preventive measure to achieve good oral and general health.[2] Better knowledge and awareness of oral health practices are linked to good habits with healthier oral cavity.[3]

Oral health care providers are the key personnel to provide oral health awareness to the individual and the community.[4] Dental students are educators of oral hygiene and role models of self-care procedures for their patients, families, and the community. Awareness of periodontal health among dental students reflects their understanding of preventive dental care.

Along with the learned experience through the dental educational curriculum, oral health behaviour also seems to be affected by cultural beliefs and economic status. Studies have shown that the oral health care behaviour of dental students was found to be different between countries and cultures.[5] Although having academic knowledge, the attitude and behaviour toward oral health are difficult to change due to the beliefs of the community.[7] Hence, the present study aims to compare oral health awareness across the academic levels of undergraduate dental students and internees.

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METHODS

The present descriptive cross-sectional study was conducted among undergraduate dental students and Internees of People's Dental College and Hospital, Kathmandu, Nepal. The data collection and analysis were completed in six months duration, from 2018 September 1 to 2019 February 28. Ethical clearance was obtained from the Institutional Review Committee of the Institute of Medicine {Ref. 37(6-11-E) 4075/076}. The survey was done using a self-administered structured questionnaire written in English.

Students were requested to remain in class at the end of the lecture to participate in the study voluntarily. Detailed explanations were given to the students on how to fill out the questionnaire, and the investigator was present till the completion of the questionnaire. After obtaining informed consent, a questionnaire was distributed. Census sampling was used for data collection. Students, who were absent on the day of the survey and who were not willing to participate in the study were excluded. All the students were asked to read the instructions and choose one answer among the options given in each questionnaire.

Total scores were calculated and descriptive statistics in the form of numbers and percentages were calculated in Microsoft Excel Sheet. The awareness scoring was presented on percentage and the difference in awareness among the subgroup was analysed.

RESULTS

A total of 281 students (248 students from first year to fourth year BDS and 33 internees) participated in the study (Table 1). The majority of the dental students were female (230, 81.85%) in study place.

On questioning whether periodontal disease is considered a cause for mouth odour, most of the students of all six groups responded positively (Table 2). Less number of first-year students were unaware of it however, after enrollment of more than one year most of the students {29 (85.29%) to 65 (97.01%)} responded correctly.

Regarding signs of periodontal disease, all groups of students considered bleeding gums and swollen gums as signs of periodontal disease. However, most of the first-year students did not know mobile teeth (35, 71.42%) and periodontal pockets 39, 79.83%) as signs of periodontal disease. On assessing different levels of participants, all 33 (100%) of internees knew bleeding gums, swollen gums, mobile teeth, and periodontal pockets are signs of periodontal disease. Hundred percent of fourth year first phase (56, 100%) and second phase students (67, 100%) understood bleeding gums are signs of periodontal disease.

Regarding risk factors of periodontal disease, smoking, and diabetes were considered as risk factors of periodontal disease by 39 (79.59%) and 22 (44.89%) first year students respectively. After completion of one year of dental study, most of the students (>90% in each category) came to know about risk factors.

On questioning about maintenance therapy, 36 (73.46%) first-year students, 35 (83.33%) second-year students, 31 (91.17%) third year, 53 (94.64%) fourth year first phase, 65 (97.02%) second-phase students, and 33 (100%) internees knew maintenance therapy after periodontal therapy is mandatory.

When questioned about the effect of professional cleaning, 20 (40.81%) first-year students thought it does not lead to sensitivity whereas 29 (59.18%) first-year students believe professional cleaning leads to sensitivity. Thirty seven (75.51%) of first-year students thought professional cleaning does not lead to mobility. Most of the internees (32, 96.97%) knew professional cleaning does not lead to mobility.

On questioning about tooth cleaning habits, majority of the students but not 100% in all groups brushed twice daily (Table 3). Use of toothpaste with fluoride was less in the first-year student group (21, 42.85%). A very small number of students in each group: two (4.08%) first year students to 22 (66.67%) internees used dental floss. Regarding the use of dental floss, 47 (95.91%) of first-year students do not use dental floss, and only 22 (66.67%) internees use dental floss. The tongue-cleaning habit was seen almost the same in all groups of students. The awareness of the need for professional cleaning was better in the fourth year second phase students group (60, 89.55%) and internees group (31, 93.91%).

Table 1: Gender distribution of the study population, n (%).

Gender	Male	Female	Total
First year students	6 (2.14)	43 (15.30)	49 (17.44)
Second year students	8 (2.85)	34 (12.10)	42 (14.95)
Third year students	2 (0.71)	32 (11.39)	34 (12.10)
Fourth year first phase students	12 (4.27)	44 (15.66)	56 (19.93)
Fourth year second phase students	14 (4.98)	53 (18.86)	67 (23.84)
Intern	9 (3.20)	24 (8.54)	33 (11.74)
Total	51 (18.15)	230 (81.85)	281 (100)

Table 2: Distribution of participants on the basis of knowledge of oral health, n (%).

		First year (49)	Second year (42)	Third year (34)	Fourth year I phase (56)	Fourth year II phase (67)	Intern (33)
Gum (periodontal) disease is considered as cause for mouth odour?	Yes	37 (75.51)	38 (92.68)	29 (85.29)	54 (96.43)	65 (97.01)	32 (96.96)
	No	3 (6.12)	3 (7.31)	3 (8.82)	1 (1.78)	2 (2.98)	1 (3.03)
	Don't know	9 (18.36)	-	2 (5.88)	1 (1.78)	-	-
Signs of gum (periodontal) disease							
Bleeding gums	Yes	47 (95.91)	40 (95.23)	33 (97.05)	56 (100)	67 (100)	33 (100)
	No	2 (4.08)	1 (2.43)	-	-	-	-
	Don't know	-	1 (2.43)	1 (2.94)	-	-	-
Swollen gums	Yes	46 (93.87)	38 (90.47)	32 (94.11)	55 (98.21)	66 (98.51)	33 (100)
	No	2 (4.08)	2 (4.76)	1 (2.94)	1 (1.78)	-	-
	Don't know	1 (2.04)	2 (4.76)	1 (2.94)	-	1 (1.49)	-
Mobile tooth	Yes	14 (28.57)	25 (59.52)	26 (76.47)	52 (92.85)	63 (94.02)	33 (100)
	No	9 (18.36)	5 (11.90)	3 (8.82)	3 (5.35)	3 (4.48)	-
	Don't know	26 (53.06)	12 (28.57)	5 (14.70)	1 (1.78)	1 (1.49)	-
Periodontal pocket	Yes	10 (20.40)	33 (80.48)	29 (85.29)	56 (100)	66 (98.50)	33 (100)
	No	6 (12.44)	1 (2.43)	1 (2.94)	-	-	-
	Don't know	33 (67.39)	6 (14.63)	3 (8.82)	-	1 (1.49)	-
Risk factor of gum disease							
Smoking	Yes	39 (79.59)	38 (90.47)	33 (97.05)	52 (92.85)	64 (95.52)	32 (96.97)
	No	3 (7.69)	-	-	1 (1.78)	1 (1.49)	1 (3.03)
	Don't know	7 (14.28)	4 (9.52)	1 (2.94)	3 (5.35)	2 (2.98)	-
Diabetes	Yes	22 (44.89)	35 (83.33)	29 (85.29)	55 (98.21)	65 (97.02)	33 (100)
	No	7 (14.28)	4 (9.52)	3 (8.82)	1 (1.78)	2 (2.98)	-
	Don't know	20 (40.81)	3 (7.14)	2 (5.88)	-	-	-
Frequent follow up of the periodontal patient is needed	Yes	36 (73.46)	35 (83.33)	31 (91.17)	53 (94.64)	65 (97.02)	33 (100)
	No	2 (4.08)	1 (2.38)	2 (5.88)	1 (1.78)	2 (2.98)	-
	Don't know	11 (22.44)	6 (14.28)	1 (2.94)	2 (3.57)	-	-
Professional cleaning leads to							
Sensitivity	Yes	29 (59.18)	33 (78.57)	12 (35.29)	17 (30.35)	35 (52.23)	13 (39.39)
	No	20 (40.81)	9 (21.42)	21 (61.76)	37 (66.07)	32 (47.76)	20 (60.6)
	Don't know	-	-	1 (2.94)	2 (3.57)	-	-
Mobility	Yes	12 (24.48)	11 (26.19)	7 (20.58)	7 (12.5)	7 (10.44)	1 (3.03)
	No	37 (75.51)	27 (64.28)	23 (67.64)	47 (83.92)	59 (88.06)	32 (96.97)
	Don't know	-	4 (9.52)	4 (11.76)	2 (3.57)	1 (1.49)	-

Table 3: Distribution of participants on the basis of practice of oral health, n (%).

		First year (49)	Second year (42)	Third year (34)	Fourth year I phase (56)	Fourth year II phase (67)	Intern (33)
How often per day do you clean your teeth?	Once	10 (20.40)	5 (11.90)	8 (23.52)	19 (33.92)	9 (13.43)	4 (12.12)
	Twice	39 (79.59)	36 (85.71)	26 (76.47)	37 (66.07)	57 (85.07)	29 (87.9)
	> Twice		1 (2.38)	-	-	1 (1.49)	-
What kind of toothpaste do you use?	Sensitive	5 (10.20)	4 (9.52)	-	2 (3.57)	1 (1.49)	-
	Normal with fluoride	21 (42.85)	30 (71.42)	31 (91.17)	51 (91.07)	65 (97.01)	32 (96.97)
	Whitening	2 (4.08)	1 (2.38)	-	1 (1.78)	-	-
	Fluoride free	4 (8.16)	2 (4.76)	-	-	1 (1.49)	1 (3.03)
	No toothpaste	-	-	-	-	-	-
	Any available toothpaste	17 (34.69)	5 (11.90)	3 (8.82)	2 (3.57)	1 (1.49)	-
Do you use dental floss?	Yes	2 (4.08)	5 (11.90)	5 (14.70)	7 (12.50)	24 (35.82)	22 (66.67)
	No	47 (95.91)	37 (88.09)	29 (85.29)	49 (87.5)	43 (64.17)	11 (33.33)
Do you clean your tongue?	Yes	40 (81.63)	37 (88.09)	32 (94.11)	46 (82.14)	49 (73.13)	27 (81.81)
	No	9 (18.36)	5 (11.90)	2 (5.88)	10 (17.85)	18 (26.87)	6 (18.18)
Is professional cleaning mandatory?	Yes	16 (32.65)	20 (48.78)	26 (76.47)	40 (71.42)	60 (89.55)	31 (93.91)
	No	8 (16.32)	11 (26.19)	6 (17.64)	4 (7.14)	5 (7.46)	2 (6.06)
	Don't know	25 (51.02)	11 (26.19)	2 (5.88)	12 (21.42)	2 (2.98)	-

DISCUSSION

Good oral hygiene practice is mandatory to prevent oral diseases. Oral health professionals play a pivotal role in raising awareness regarding good oral health practices and the prevention of oral disease. Dental students are budding oral health professionals, they can play a crucial role in educating and motivating their patients, families, friends, and society.[7] Therefore before counseling the patients, they must acquire proper knowledge and attitude regarding oral health care. Dental colleges are the place where they can gain theoretical knowledge and clinical exposure according to the academic curriculum. In People's Dental College and Hospital, first and second year of undergraduate (pre-clinical) students deal with preclinical practical classes along with theoretical education classes. Third-year and fourth-year (first phase and second phase) clinical students deal with patients for clinical exposure along with theoretical knowledge. In one year of internship, they apply their theoretical and clinical knowledge to develop their skill. Along with academic knowledge and skill, various other factors like socio-economic status, culture, etc. might affect the attitude of the students in motivating patients regarding oral health practice.[5,6] Thus this study was conducted to know the level of knowledge about oral health awareness across the academic levels of undergraduate dental students.

Dental plaque is considered as the main etiologic factor for periodontal disease and tooth brushing is the most effective way of maintaining oral health hygiene. In our study, most of the students brush twice daily. Unexpectedly, the frequency of brushing twice had been reduced in third and fourth-year first phase students by 76.47% and 66.07% respectively. It might be due to the academic load of the students. Use of toothpaste with fluoride was less in the first-year student group (42.85%). This might be because the first year students hadn't been taught about the role of Fluorides in the prevention of dental caries. As their education level increased, the use of fluoride toothpaste also increased. This result coincides with the study done by Sharda et al. [8]

Interdental aids are used along with tooth brushing for effective plaque control in the interdental areas. Only 66.67% of internees used dental floss and 95.91 % of first-year students do not use dental floss. Hence, they should be made aware of the use and importance of interdental aids and also should be able to choose appropriate interdental aids according to the type of present gingival embrasure.

Professional tooth cleaning is the first step in the treatment of oral and periodontal disease. Results of our study showed awareness regarding the need for professional cleaning correlated with the level of their education. Similarly, when they were

asked about the effect of professional cleaning on sensitivity and mobility, first year and second-year students responded that scaling leads to sensitivity. This might be because they had not been taught about clinical subjects in first and second year, which would be taught during their clinical classes. Thus, we should expect that with this knowledge they could convince patient regarding the need for professional cleaning and also could educate about their disbelief that scaling leads to problems like sensitivity and mobility.

Bleeding on probing is the first objective sign of gingival disease. Similarly, swollen gums, mobile teeth, and periodontal pockets are the common signs and symptoms of periodontal disease which has been caused as a consequence of poor oral hygiene. In our study, most of the first-year students did not know mobile teeth and periodontal pockets as signs of periodontal disease. It might be because they were not clinically exposed. Whereas all levels of clinical students knew bleeding gums, swollen gums, mobile teeth, and periodontal pockets as signs of periodontal disease.

Mouth odour is considered a social problem and also affects self-esteem. Periodontal disease and tongue coating are the primary cause of mouth odour.[9,10] Almost all students in our study were aware of it. However, few first-year students were unaware of periodontal disease being the cause of mouth odour. After enrollment of more than one year, most of the students 85.29% to 97.01% (third year and second phase) responded correctly.

Similarly, after completion of one year of dental study, most of the students (>90%) came to know that smoking and diabetes as risk factors. The dental students were able to educate and motivate the general population about the inter-relationship between smoking, systemic disease, and oral health.

After dental procedures, patients need to visit for maintenance therapy depending upon the type of procedure they have undergone. In our study, from the first-year students (73.46%) to fourth-year second phase students (97.02%) and 100% of internees have understood the importance of maintenance therapy.

The main limitation of this study was that the results cannot be generalized as it was not performed in multiple dental colleges. The study was performed based on self-reported data which may have made errors in interpreting the questions.

CONCLUSIONS

The oral health awareness increased according to the academic growth among dental students and internees based on their behaviour and attitude. While comparing all these variables among different levels of students, all the variables coincided with the increasing knowledge gain according to academic growth. The habits of brushing twice daily and tongue cleaning do not follow the level of knowledge.

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