ORIGINAL RESEARCH

Self-assessed Oral Health Awareness and Attitude of the First and Final Year Undergraduate Medical and Dental Students in India

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ABSTRACT

Aims and Objective: To compare the attitude and awareness of dental and medical students in the first and the final academic years and to trace the change in their attitude and awareness towards oral health; to also bring out differences/similarities in response to the questionnaire based on gender.

Materials and methods: A modified version of HU-DBI questionnaire was used to conduct the survey in medical and dental colleges of India. A total of 279 students were recruited in the study. The data collected concerned the oral hygiene awareness and attitude, dental complaints and previous visits to dentists.

Results: Significant differences were found for 9 of 17 items, reflecting an increased awareness and improved attitude toward oral health in the final year dental students as compared to the first year dental students. The dental students exhibited better awareness than the medical students irrespective of gender.

Conclusion: Significant improvement was found in the awareness and attitude of the final year dental students as compared to the first year dental students. This change was marginal in the medical students.

Keywords: Attitude, Awareness, Knowledge.

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INTRODUCTION

Good oral health is the key to a healthy constitution and the onus of creating awareness among the masses lies upon the dentists. However, precept and practice go hand in hand. In order to have good social oral health, it is not only necessary to create awareness among the masses but it is equally essential that the doctors should be exemplary *vis à vis* their oral health. Hence, an attempt was made through this study to approximate the status of oral health awareness and attitude among the first year and the final year students of medical and dental colleges in India, through self assessment response to a common questionnaire based on the HU-DBI model regarding attitude and other questions regarding their awareness.

Teaching regarding oral hygiene/health becomes ineffective unless it leads to a profound change in students behavior and attitude toward improvement in their personal oral health.[1] The behavior of oral health providers and their attitudes toward oral health could affect their capacity to deliver oral health and thus might affect the oral health of their patients.[2] Dental health providers need to set an example for their patients by maintaining good oral health in their mouths.[3] Through their undergraduate study, it is logical for the students in the field of dentistry to develop and modify their attitudes toward their own oral health.[4] Studies have been carried out regarding the attitudes of dental students toward oral health in many countries like Japan and Australia,[5] Finland,[6] Korea.[7]

Thus, the objective of this study was to compare and bring forth the differences in the attitude and awareness towards oral health in the first and final year medical and dental students.

MATERIALS AND METHODS

A questionnaire-based study was conducted among students of Darshan Dental College and Rabindra Nath Tagore Medical College enrolled under Rajasthan University which is located in the south-east zone of Rajasthan, India. Convenience sampling was used. The first and final year students of both the college who were present on the day of examination and who were cooperative were included in the study.

The target population comprised of 279 subjects out of which 138 were medical and 141 were dental students. First year medical students were 43 and final year were 95 in number. First year dental students were 74 and final year were 67 in number. Female and male students were 131 and

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148 respectively. Sixty-five students who were absent on the day of examination and uncooperative were excluded from the study.

The questionnaire comprised of 28 questions. A partially modified English version of HU-DBI questionnaire consisting of 17 questions regarding their attitude was used in this study. Pretest of the questionnaire was done before starting the survey. The reliability of the questionnaire was assessed after 10 days. Other questions, such as: Have you had an oral health check-up in the past (yes/no)? Do you have a regular check-up? If yes, indicate the time between check-ups; if no, when do you visit a dentist for professional help — only for problems/occasionally/never. When was the previous check-up/treatment? Do you presently have any oral health problem which you think needs professional attention? (If yes, please explain the problem — is it incapacitating?). Have you consulted a dentist for this complaint etc.? were put up to know about their oral health awareness.

Ethical clearance was obtained from the ethical committee of Darshan Dental College and Hospital before the study and permission was sought from Darshan Dental College and Rabindra Nath Tagore Medical College to conduct the study.

STATISTICAL ANALYSIS

A stepwise logistic regression, ANOVA and Chi-square analysis was applied by using Statistical Package for the Social Sciences (SPSS) software (version 15.0). Group comparisons were made using two-tailed Student's t-tests for HU-DBI total score. Statistical significance was based on probability values of less than 0.05.

Table 1: Distribution of the students by gender, course, level of education and their mean age

Course	*Dentistry*		*Medical*	
Level	I year	IV year	I year	IV year
Gender	N (%)	N (%)	N (%)	N (%)
Male	33 (23.4%)	26 (18.4%)	27 (19.6%)	62 (44.9%)
Female	41 (29.1%)	41 (29.1%)	16 (11.6%)	33 (23.9%)
Total	74 (52.5%)	67 (47.5%)	43 (31.2%)	95 (68.8%)
Mean age	18.09	21	20.47	23.57

RESULTS

Table 1 shows that the mean ages of the first and final year dental students were 18.09 and 21.00 while the mean ages of the first and final year medical students were 20.47 and 23.57 respectively.

Table 2 reveals that only 2.9% medical and 5.4% dental students went to a dentist for a regular oral health check-up. Most of the students never visited a dentist and there is a marginal difference between the number of students who never visited a dentist or paid a dental visit only in case of an acute dental problem. A significant finding that emerged was that the dental students were more inclined towards dental check-up than medical students. The gender of the student did not seem to make any substantial difference.

Table 3 reveals that the percentage distribution of the students with 'agree' responses to the 17 items by gender. Compared to girls, boys seemed to be more worried about color of teeth and gums, problem of bad breath and bleeding gums and have used dye to see how clean their teeth are as they think that they are getting worse despite their daily brushing. Girls seemed to be more educated about professional brushing of teeth, not to use brush with hard bristles and brush with strong strokes.

Table 4 reveals that, as compared to the dental students of year I, a substantial difference emerged in the awareness level of the dental students of year IV. There was no substantial difference between the first and the final year medical students with regard to the regular visits to the dentist. Approximately, 55 to 58% first year medical and dental students did not worry much about visiting a dentist and about 35 to 37% felt that they could not avoid having false teeth when old. Most of the dental and medical students were not particular about visiting a dentist regularly.

Table 5 presents the estimated coefficient and related statistics from a logistic regression model that predicts group membership. This model contains eight variables from the HU-DBI and level of dental education. Dental students were more likely to have positive answer to the above mentioned HU-DBI statements.

Table 6 reveals, that the mean HU-DBI score for each group; the maximum score possible was 11. Mean HU-DBI score of the final year medical students was the highest (7.36 + 2.29). However, the mean score between the courses and the level of education was not significantly different.

Table 2: Dental visits of medical and dental students for professional help

Visit to a dentist for professional help	*Only for problems N (%)*		*Occasionally N (%)*		*Never N (%)*		*Regularly N (%)*	
	Dental	*Medical*	*Dental*	*Medical*	*Dental*	*Medical*	*Dental*	*Medical*
	49 (17.6%)	53 (19%)	39 (14%)	11 (3.9%)	38 (13.6%)	66 (23.7%)	15 (5.4%)	8 (2.9%)

Table 3: Percentage of 'agree' response by gender for HU-DBI

Items	*Male N (%)*	*Female N (%)*	*Total N (%)*
1. I do not worry much about visiting the dentist	85 (30.5)	81 (29)	166 (59.5)
2. My gums tend to bleed when I brush my teeth	15 (5.4)	10 (3.6)	25 (9)
3. I worry about the color of my teeth	103 (36.9)	94 (33.7)	197 (70.6)
4. I am bothered by the color of my gums	77 (27.6)	56 (20.1)	133 (47.7)
5. I have noticed some white sticky deposits (plaque) on my teeth	27 (9.7)	40 (14.3)	67 (24)
6. I think my teeth are getting worse despite my daily brushing	53 (19)	30 (10.8)	83 (29.7)
7. I worry about having bad breath	76 (27.2)	49 (17.6)	125 (44.8)
8. I think I can clean my teeth well without using toothpaste	30 (10.8)	16 (5.7)	46 (16.5)
9. It is impossible to prevent gum disease with tooth brushing alone	102 (36.6)	81 (29)	183 (65.6)
10. I have never been taught professionally how to brush	69 (24.7)	51 (18.3)	120 (43)
11. I have used a dye to see how clean my teeth are	27 (9.7)	12 (4.3)	39 (14)
12. I put off going to the dentist until I have toothache	95 (34.1)	68 (24.4)	163 (58.4)
13. I use dental floss/mouthwashes at least	39 (14)	44 (15.8)	83 (29.7)
14. I use a toothbrush which has hard bristles	44 (15.8)	17 (6.1)	61 (21.9)
15. I think that I can not help having false teeth when old	65 (23.3)	35 (12.5)	100 (35.8)
16. I do not feel I have brushed well unless I brush with strong	70 (25.1)	33 (11.8)	103 (36.9)
17. I feel I sometimes take too much time to brush my teeth	81 (29)	70 (25.1)	151 (54.1)

Table 4: Percentage of 'agree' response for HU-DBI among dental and medical students

Items	*Dental*		*p-value*	*Medical*		*p-value*
	1st year (%)	*IV year (%)*		*1st year (%)*	*IV year (%)*	
Item 1	40 (28.4)	46 (32.6)	0.076	25 (18.1)	55 (39.9)	0.978
Item 2	4 (2.8)	1 (0.7)	0.210	8 (13.05)	12 (8.7)	0.356
Item 3	44 (31.2)	47 (33.3)	0.185	35 (25.4)	71 (51.4)	0.391
Item 4	15 (10.6)	41 (29.1)	0	23 (16.7)	54 (39.1)	0.713
Item 5	15 (10.6)	23 (16.3)	0.060	7 (5.1)	22 (15.9)	0.358
Item 6	10 (7.1)	16 (11.3)	0.113	14 (10.1)	43 (31.2)	0.160
Item 7	27 (19.1)	20 (14.2)	0.404	27 (19.0)	51 (37.0)	0.318
Item 8	14 (9.9)	2 (1.4)	0.003	8 (5.8)	22 (15.9)	0.548
Item 9	51 (36.2)	45 (31.9)	0.823	26 (18.8)	61 (44.2)	0.673
Item 10	41 (29.1)	12 (8.5)	0	26 (18.8)	41 (29.7)	0.060
Item 11	18 (12.8)	11 (7.8)	0.246	2 (1.4)	8 (5.8)	0.429
Item 12	37 (26.2)	25 (17.7)	0.130	32 (23.2)	69 (50)	0.826
Item 13	31 (22)	19 (13.5)	0.093	17 (12.3)	16 (11.6)	0.004
Item 14	14 (9.9)	3 (2.1)	0.009	8 (5.8)	36 (26.1)	0.024
Item 15	26 (18.4)	18 (12.8)	0.290	16 (11.6)	40 (29)	0.587
Item 16	20 (14.2)	18 (12.8)	0.983	16 (11.6)	49 (35.5)	0.117
Item 17	42 (29.8)	33 (23.4)	0.373	27 (19.6)	49 (35.5)	0.220

DISCUSSION

Rabindra Nath Tagore Medical College and Darshan Dental College are among the premier institutes of India and have maintained good academic record. A number of studies have been conducted on various aspects like oral hygiene status, etc., but the comparison of the medical and dental students in Udaipur, both at the first and final year levels, is reported for the first time in this study.

Out of total 279 subjects, 138 were medical and 141 were dental students. The overall attrition rate was 7%, mainly coming from medical students. There are statistically significant values between medical and dental students in year IV in items 5, 9-11, 13, 15, 17, 19. The medical students were casual in their attitude, a significant number put off going to a dentist despite bleeding gums and bad breath. However, the dental students appeared better trained professionally, exhibited better self assessed oral health and also better utilization of the oral health aids.

As compared to the dental students of year I, a substantial difference emerged in the awareness level of the dental students of year IV who seemed to be more conscious about the color of gums and had information about the correct method of brushing. They also noticed dental plaque on their teeth perhaps because of their enhanced knowledge. The dental students of year IV were slightly more conscious about their visit to the dentist and the color of their teeth. Students of both the years were more or less equally worried about their bad breath and felt that mere tooth brushing does not suffice.

Table 5: Logistic regression analysis for kinds of education

Items	*B*	*Std. error*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% Confidence interval for Exp(B)*	
							Lower bound	*Upper bound*
Item 5	1.483	0.610	5.912	1	0.015	4.407	1.333	14.566
Item 8	–0.749	0.351	4.560	1	0.033	0.473	0.238	0.940
Item 10	0.890	0.330	7.274	1	0.007	2.434	1.275	4.647
Item 11	1.255	0.441	8.089	1	0.004	3.507	1.477	8.326
Item 13	0.831	0.331	6.326	1	0.012	2.297	1.201	4.390
Item 14	–1.533	0.492	9.710	1	0.002	0.216	8.233E-02	0.566
Item 15	1.074	0.329	10.673	1	0.001	2.928	1.537	5.579
Item 17	0.859	0.425	4.075	1	0.044	2.360	1.025	5.434
Level of education	1.464	0.357	16.842	1	0	4.321	2.148	8.693
Constant	–3.757	1.057	12.622	1	0			

Table 6: Comparison of HU-DBI scores between courses and levels of education

Level course	*First year*	*Final year*
Dentistry*	6.07 ± 2.17	5.67 ± 2.34
Medical**	7.37 ± 2.06	7.36 ± 2.29

*p = 0.298, t = 1.044; **p = 0.972, t = 0.035

However, while the students of year I were particular about flossing, the final year students exhibited a casual attitude in this regard.

There was no substantial difference between the first and the final year medical students with regard to the regular visits to the dentist. The students generally deferred going to a dentist until compelled by severe toothache. An interesting finding that emerged after comparing the two was that the students of year I were more concerned about the visible signs of bad oral health like the color of their teeth and bad breath. Perhaps this is the reason that they made liberal use of mouthwash and also used dental floss. In comparison, the students of year IV were more concerned about the health and color of gums and were better acquainted with the technique of tooth brushing and noticed plaque formation on their teeth.

Approximately, 55 to 58% first year medical and dental students did not worry much about visiting a dentist and about 35-37% felt that they could not avoid having false teeth when old. While the medical students were more concerned about bad breath, the color of their gums and teeth, yet the percentage of bleeding gums was more in them and about 32% of the medical students felt that their teeth are getting worse despite their daily brushing. While a marginal number of both medical and dental students felt that they could clean their teeth without using a tooth paste, the dental seemed to be more aware of technique and the utility of other oral hygiene aids like flossing, dye etc. as they were professionally taught how to brush. They also could recognize dental plaque on their teeth. But a greater percentage of medical students put off going to a dentist until an emergency arose.

Most of the dental and medical students were not particular about visiting a dentist regularly. More dental students noticed plaque on their teeth, probably because of their enhanced study through University study. They were more concerned about the color of their gums, and as compared to medical students, they were more aware of the correct technique of tooth brushing, used dye, floss and mouthwashes. They were aware that proper tooth brushing should be supplemented with other oral aids in order to maintain good oral health. They exhibited greater awareness about not using hard bristles and strong strokes. The medical students felt that their teeth were getting worse despite daily brushing, had bad breath and bleeding teeth.

Taani showed that a high percentage of Jordanian adults reported gum bleeding on brushing, bad breath, and being irregular attenders to dentist.[8]

In another study on North Jordan school children, he showed that around 80% of the subjects attended the dentist only in emergency.[9] While this study reveals that only a minor proportion of subjects went for regular oral health check-up and there was a marginal difference between those who never visited a dentist or paid a dental visit in case of an acute problem.

This study also reveals that the increase in the age and level of education, the students become more conscious of their oral health. Kawamura et al[10] showed that the dental health attitudes of Japanese dental students improved with increasing levels of education. The level of oral self care has also been related to a positive perception of a dental carrier Ahed Mohammed Al-Wahadni et al[3] in their study showed that females had more positive attitudes. This study shows that boys were more concerned about the physical appearance and had more oral health problems while girls were more educated about professional brushing and not to use brush with hard bristles and brush with strong stokes.

The ultimate result was found that the final year dental students had more awareness and positive attitude than the first year dental and all the medical students. WS Rong et al.[11]

in their study also explained that dental students in their final year under the influence of clinical dentistry have a significantly better oral hygiene and positive attitude. Studying clinical dentistry has allowed the dental students to have a significantly better oral hygiene practice, positive attitude and to be confident of their oral health practice than their medical counterparts. Communication skills training also has a positive effect on the knowledge and behavior of dental students.[12]

CONCLUSION

Significant improvement was found in the awareness and attitude of the final year dental students as compared to the first year dental students. This change was marginal in the medical students.

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