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A Comparative Study To Assess Oral Health Knowledge And Practices Amongst Medical And Paramedical Students In A Medical College, Hp

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Abstract

Background: Dental caries is a major health problem affecting an estimated 90% of school children worldwide. **Objective:** To determine the relationship between oral health knowledge and practice among students. **Methodology:** This cross-sectional study was conducted in a Medical College and Hospital, Solan, Himachal Pradesh (HP). Data was collected using a pretested questionnaire on 200 randomly selected Medical and Paramedical students from the institution. The questionnaire contained questions to assess the respondents' oral health knowledge, attitude and practices. **Statistical analysis:** The data was put into Microsoft Excel software and was analysed using SPSS 22. The level of significance was kept at 5%. **Results:** The mean knowledge score of medical students was higher than that of paramedical students for 3 questions on oral health About 28% medical students visited dentist in pain in comparison to only 8% paramedical students. 10% medical students never visited a dentist in contrast 2% paramedical students. Both these differences were statistically highly significant (p value is 0.00000882) **Conclusion:** Oral health education should be a life-long practice and incorporated into the school as well as college environment with the support of teachers and parents.

Keywords: Oral heath, Knowledge, Gender, Questionnaire.

Introduction: Globally, oral health has been recognized vital for over all health and well being of humans. In the current scenario, the population of most Asian and Latin American countries is inevitably affected by one of the most common oral diseases i.e. Dental Caries. Majority of adults and about 90% of school children worldwide have been infected with this disease. On the brighter side, an improvement in oral health status has also been noticed with decreasing trend in DMFT (Decayed, Missing, Filled Teeth) scores through out the world. In Malaysia, oral health indicator such as percentage of DMFT (decay, missing, filled, extraction) among 12-yearold children had shown marked improvement from 47.4% with 3 or less decayed, missing, filled teeth in 1990 to 91.2% in 2000.[1] This happened as a result of people being influenced by better knowledge in taking care of their teeth and adopted a positive outlook towards oral health. As shown in studies healthy oral health practices could be inculcated through proper oral health education. [2] Adoption of healthy oral habits is considered relevant in controlling behavioural disease such as dental caries and periodontal disease. In order to prevent the occurrence of oral disease and to maintain good oral health status people take measures to learn and practice oral health habits.

Traditionally, good oral health practice comprises of implementing of 2 sets of behavior : self-care habits (dental hygiene, restricting intake of sugary products, use of fluoridated products) and utilization of dental services (regular dental examinations, oral health education, and professionally applied preventive measures).[3] In order to transition to healthier attitudes and practices individuals need to be provided with adequate information, motivation and opportunities to practice these measures.[4] The assessment of knowledge, attitude and practice is imparative for establishment of such oral education system.[5]

Material and Methods: A cross-sectional study utilizing a self-reported questionnaire adopted from Petersen et al. (2000) and Stenberg et al. (2000) was performed on 200 Medical and Paramedical students studying in Maharishi Markandeshwar Medical College and Hospital (MMMCH), Kumarhatti, Solan, HP. The inclusion criteria were students aged 18–25 years old, students who were pursuing Medical and Paramedical courses in the same institution and those who completed the questionnaire. The exclusion criteria were participants aged more than 25 years old and those who had provided incomplete responses in the questionnaire. Participants who had provided incomplete responses in the questionnaire (n = 25) were excluded. Finally, data from 200 students (82 males, 118 females) were subjected to analysis. Informed consent was obtained verbally from each participant. The protocol of this study was approved by the Institutional Ethical Committee (**MMMCH/IEC/23/758)** MMMCH, Kumarhatti, Solan, HP. Questionnaire contains questions that would assess students knowledge and attitude about oral health.

Questionnaire: A self-administered questionnaire was handed over to each participant and participants were asked to fill the questionnaire. In addition to sex and age, the questionnaire included the following items.

Dental knowledge: This section contained 10 questions to be answered in "**Yes/No"** format. Questions included were such as consumtion of too much sweet food causes tooth decay/dental caries, does gum bleeding means inflamed gum, does regular brushing of teeth can protect oneself from gum bleeding, does dental plaque means soft debris on teeth and can lead to dental caries, does carious or decayed teeth affect teeth appearance, do sweets affect the teeth adversely, do fizzy drinks affect the teeth adversely. Also the questionnaire included whether using fluoride strengthens the teeth and whether general body health has a relationship to oral health and dental diseases.

Attitude: This section comprised of 2 questions pertaining to frequency of dental visits :Regularly every 6-12 months / Occasionally/ When I have dental pain /Never and History of last dental visit :Less than 6 months ago/ Last 6-12 months/ Last 1-2 years/ Last 2-5 years/ More than 5 years

Practice: This section comprised of 5 questions: Frequency of toothbrushing, time spent for brushing, frequency of eating sweet food per day, frequency of taking candy/ chocolate/sweets and frequency of taking soft drinks.

The study was approved by the **Institutional Ethical Committee**

Results: Questionnaire responses were tabulated using Microsoft excel, checked for errors and corrections were made subsequently. SPSS version 22 was used for Statistical analysis. The level of significance is kept at 5%. A total of 200 students (100 medical and 100 paramedical students) participated in the study.

Quantitative variables are expressed as mean and standard deviation while the categorical variables are indicated as percentages. The comparison between medical and paramedical students as regards their knowledge score and also comparison between the same groups with respect to their attitude and practice of dental hygiene was done using chi square test of significance.

Comparison between mean knowledge scores of medical and paramedical students was done using two tailed unpaired T test .The mean of knowledge scores for medical and paramedical students is comparable i.e 8.73 and 8.23 respectively (p value less than 0.05 calculated using two tailed unpaired T test depicted in Table no 1.

The mean knowledge score of medical students is higher than that of paramedical students for question number 2, 5 and 10 and this difference was found to be highly significant as the p value stands at <0.00001, 0.036 and 0.0015 respectively. The knowledge score of paramedical students for question number 9, however is higher than that for medical students and this difference is found to be statistically highly significant (P value equals 0.000022). (Table no 2)

As far as the history of last dental visit is concerned, about 33% female medical students made visit to dentist while only 7.7 % males visited dentist within last six to twelve months. This difference is found to be statistically highly significant with p value standing at 0.00169. (Table no.3)

About 28% medical students made visit to a dentist whenever they had dental pain in comparison to only 8% paramedical students. 10% medical students never visited a dentist in contrast 2% paramedical students. Both these differences are statistically highly significant (p value is 0.00000882) With reference to frequency of eating sweet food per day, about 80% paramedical students were eating 2 to 4 times while 46% medical students were eating sweet food as frequently (P value is <0.00001) (Table no.5)

Table 1: Comparison between mean knowledge scores of medical and paramedical students using unpaired T test (Two tailed)

	Medical students	Paramedical students
Mean	8.73	8.23
Variance	1.4771	1.1971
Standard deviation	1.2154	1.0941
N	100	100
t =	3.0576	
d.o.f =	198	
Critical value =	1.972	
P	<0.05	

Table 2: Knowledge score comparison between medical (100) and Paramedical students (n =100)

Q.No	Questions		Medical students	Paramedical students	P value
Q.1	Consuming too much sweet food causes tooth decay/dental caries	Yes	92	90	0.6212
		No	8	10	
Q.2	Gum bleeding means inflamed gum	Yes	72	36	**<0.00001**
		No	28	64	
Q.3	Regular brushing of teeth can protect oneself from gum bleeding	Yes	82	86	0.4404
		No	18	14	
Q.4	Dental plaque means soft debris on teeth	Yes	89	90	0.818
		No	11	10	
Q.5	Dental plaque can lead to dental caries	Yes	92	82	**0.036**
		No	8	18	
Q.6	Carious or decayed teeth can affect teeth appearance	Yes	98	94	0.149
		No	2	6	
Q.7	Sweets affect the teeth adversely	Yes	91	88	0.49
		No	9	12	

Q.8	Fizzy drinks affect the teeth adversely	Yes	96	89	0.0602
		No	4	11	
Q.9	Using Fluoride strengthens the teeth	Yes	57	78	**0.0015**
		No	43	22	
Q.10	General body health has a relationship to oral health and dental diseases.	Yes	99	81	**0.000022**
		No	1	19	

Table 3: Attitude and Practice towards oral health according to gender (MEDICAL STUDENTS)

ATTITUDE				
Frequency of dental visits	Total	Male	Female	P value
Regularly every 6-12 months	42	13	29	
Occasionally	20	7	13	
When I have dental pain	28	14	14	0.3602
Never	10	5	5	
History of last dental visit	Total	Male	Female	
Less than 6 months ago	35	13	22	**0.00169**
Last 6-12 months	23	3	20	
Last 1-2 years	23	11	12	
Last 2-5 years	05	1	4	
> 5 years	14	11	3	
PRACTICE	Total	Male	Female	
Frequency of tooth brushing				0.14
Less than once per day	05	2	3	
Once per day	24	14	10	
Twice per day	69	22	47	
More than twice per day	02	01	01	
Time spent for brushing				
Less than 1 minute	13	04	3	0.7132
1 minute	21	7	14	
2 minutes	58	22	36	
More than 2 minutes	14	6	8	
Frequency of eating sweet food per day				

Less than 1 time	46	17	29	
2-4 times	46	18	28	0.7895
4-6 times	05	02	03	
More than 6 times	03	02	01	
Frequency of taking candy/chocolate/sweets				
Never/ once in a while	17	5	12	
1 time/week	12	5	7	0.63113
2 times/week	29	14	15	
3-5 times per week	26	8	18	
Everyday	13	5	08	
Several times per day	03	02	01	
Frequency of taking soft drinks				
Never/once in a while	21	6	15	
1 time/week	31	14	17	
2 times/week	28	12	16	0.5431
3-5 times /week	13	03	10	
Everyday	05	03	02	
Several times /day	02	01	01	

Table 4: Attitude and Practice towards oral health according to gender (Paramedical students)

ATTITUDE				
Frequency of dental visits	Total	Male	Female	P value
Regularly every 6-12 months	45	17	28	0.2731
Occasionally	45	19	26	
When I have dental pain	08	06	02	
Never	02	01	01	
History of last dental visit	Total	Male	Female	P value
Less than 6 months ago	35	15	20	
Last 6-12 months	23	11	12	0.9743
Last 1-2 years	35	15	23	
Last 2-5 years	02	01	01	
> 5 years	02	01	01	

PRACTICE	Total	Male	Female	P value
Frequency of tooth brushing				
Less than once per day	02	01	01	0.7138
Once per day	27	14	13	
Twice per day	69	27	42	
More than twice per day	02	01	01	
Time spent for brushing				P value
Less than 1 minute	13	01	12	0.0870
1 minute	23	09	14	
2 minutes	51	23	28	
More than 2 minutes	24	11	13	
Frequency of eating sweet food per day				P value
Less than 1 time	02	01	01	
2-4 times	80	34	46	0.4078
4-6 times	10	07	03	
More than 6 time	04	01	03	
Frequency of taking candy/chocolate/sweets				P value
Never/ once in a while	03	02	01	
1 time/week	36	14	22	
2 times/week	43	18	25	0.93323
3-5 times per week	14	07	07	
Everyday	02	01	01	
Several times per day	02	01	01	
Frequency of taking soft drinks				P value
Never/once in a while	17	10	07	
1 time/week	44	13	31	0.297S
2 times/week	23	12	11	
3-5 times /week	12	06	06	
Everyday	02	01	01	
Several times /day	02	01	01	

Table 5: Attitude and Practice towards oral health according to qualification i.e comparison between medical and paramedical students.

ATTITUDE				
Frequency of dental visits	Total	Medical students	Paramedical students	P value
Regularly every 6-12 months	87	42	45	**0.00000882**
Occasionally	65	20	45	
When I have dental pain	36	28	08	
Never	12	10	02	
History of last dental visit	Total	Medical students	Paramedical students	P value
Less than 6 months ago	70	35	35	0.0074
Last 6-12 months	46	23	23	
Last 1-2 years	61	23	38	
Last 2-5 years	07	5	2	
> 5 years	16	14	2	
PRACTICE	Total	Male	Female	P value
Frequency of tooth brushing				
Less than once per day	7	5	2	0.6910
Once per day	51	24	27	
Twice per day	138	69	69	
More than twice per day	5	2	2	
Time spent for brushing				
Less than 1 minute	17	7	10	0.5309
1 minute	41	21	20	
2 minutes	108	58	50	
More than 2 minutes	34	14	20	
Frequency of eating sweet food per day				
Less than 1 time	48	46	2	**<0.00001**
2-4 times	126	46	80	
4-6 times	17	5	12	
More than 6 time	9	3	6	
Frequency of taking				

candy/chocolate/sweets				
Never/ once in a while	20	17	3	
1 time/week	48	12	36	
2 times/week	72	29	43	**0.0000542**
3-5 times per week	40	26	14	
Everyday	15	13	2	
Several times per day	5	3	2	
Frequency of taking soft drinks				P value
Never/once in a while	38	21	17	
1 time/week	75	31	44	
2 times/week	51	28	23	0.4812
3-5 times /week	25	13	12	
Everyday	7	5	2	
Several times /day	4	2	2	

Discussion: Only two questions on teeth appearance and sweets (Questions 1 and 6) scored above 90% (Table 2). However, the knowledge of oral disease on various aspects as indicated by Questions 2 and 9 was poor. These findings are consistent agreed with a study conducted among the school children in Jordan[5]. The lack of knowledge in the periodontal health reflects the poor dental health education status. Also, contact with dental professionals being restricted only to the treatment hour might be contributing to it. Medical students demonstrated a higher mean knowledge score compared to paramedical students for questions 2, 5, and 10, and this difference was found to be statistically significant. This may be attributed to the fact that in present curriculum inclusion of dental classes is imperative in medical education considering dental as an allied branch of surgery.

In another study conducted in the year 2005 by Joshi et al.[6] it was found that boys displayed better knowledge than girls. but no such significant difference was found in the present study. On account of the frequency of paying visit to a dentist it was found that the majority of the medical and paramedical students in the present study reported visiting a dentist every 6-12 months. This could be attributed to various oral health programmes being conducted in schools and colleges now a days that mandate annual routine check-ups for all students.. However, the frequency of dental visit remains relatively low in second-year secondary school students in Canada[7]. This may be due to the lack of oral health knowledge among these students leading to irregular visits. This neglect in health seeking behavior of students some hoe reflects they being less aware about the significance of oral health

The most common treatment sought by the students during their last dental visit amongst fillings, extractions, oral prophylaxis was dental check-ups, which explained why the frequency of students' dental visit was low. By the means of routine visits students recognise that dental check ups are absolutely necessary for preventing the onset of periodontal disease and tooth decay [8]. A study conducted by Barker and Horton (2008)[9] among the pre-school children in California showed that parents played a major role in influencing their children's oral health and access to care. On the contrary another study showed that family and friends play a less significant role in advising a dental visit These differing findings could be explained by the fact that the respondents in this study were teenagers who try to achieve independence and establish their own identities, potentially undermining the the influence of family and friends.

Majority of individuals specially children and youngsters experience dental anxiety which can be effectively managed if early oral education is provided thereby improving the long term follow-up[10]. Various initiatives have been taken by the local dental health authorities to start dental check-up as early as in preschool level so that a

positive first dental visit experience encourages young children to follow up. If the very first dental experience of an individual turns out to be unpleasant, the patient gets scared and reluctant for future appointments. Although, the dentists have role in promoting and disseminating the knowledge of oral disease prevention and motivating people for dental visits. however, with the limited number of dentists serving the patients and the amount of time dentists spend with each of the patient is often limited. Therefore, the responsibility for oral health education should not solely rest on dentists alone. Other healthcare professionals and educators should join hands and collaborate to ensure that comprehensive oral health education reaches evey child and each family.

According to a study conducted in 2008, various factors such as lack of economic resources, accessibility of dental services and parental beliefs might contribute to delay in seeking dental care.[9]. The present study showed that majority of the students brushed their teeth twice a day with girls exhibiting higher frequency of brushing their teeth and spending longer time in toothbrushing as compared to boys, supported by other studies [11,12,13,14] Previous research has also reported that toothbrush and toothpaste were the most commonly used oral hygiene aids.[14,15,16,17]. Interestingly, female students reported consuming more sugar through sweet foods, snacks, and soft drinks compared to male students. This aligns with research showing that girls often have a greater preference for sweet foods, while boys tend to favor higher fat and salt content in fast foods and snacks. Apart from sweet snacks, carbonated drinks were reported as the most favored among the respondents.[18] The availability of the sweet food, snacks and carbonated drinks within and outside the compound of the college facilitated the purchasing of the items among the students. Nevertheless, students seem to be more drawn to the taste and appearance of the food than its nutritional value. It's important to ensure that healthy food options are readily available in school and college canteens, while foods and drinks with high sugar content should be either prohibited or restricted

There is a need to decrease dependency on oral health professionals and motivate students to be responsible for their own oral health. The schools and colleges may serve as the best platform for promotion of oral health care among teenagers and young adults. Intensifying oral health education programmes is very important in order to promote lifelong oral health practices. The incorporation of oral health education activities into the school's curriculum has already taken place but additional efforts in the form of providing educational materials, organizing health promotion activities are the need of the hour. Undoubtedly, the support from the parents and teachers in organizing and participating in these initiatives is very essential. While parents to a certain extent influence their children's eating behavior but empowering children to make healthy food choices themselves would be even more effective idea in promoting oral health and overall well-being.

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