

## Dental Health amongst Medical and Dental Undergraduates: Findings of an Observational Study from Karachi, Pakistan

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### ABSTRACT

**Objective:** To evaluate dental hygiene practices and dental caries status among medical and dental undergraduates studying in public sector colleges.

**Materials and Methods:** It was a cross sectional study which was conducted among medical and dental undergraduates. A total of 500 study subjects were chosen through a non probability convenience sampling technique. A self administered closed ended pre-tested questionnaire was distributed among participants followed by clinical examination to assess the prevalence of dental caries in them by using WHO index of dental caries. Descriptive analysis of qualitative and quantitative variables was performed. Chi square was performed to find out association between dependent and independent variables.

**Results:** The frequency of brushing teeth among dental graduate was found more as compared to medical counterparts (66% vs. 36%,  $p=0.044$ ). Majority ( $n=457$ ) study subjects stated that they used dental floss for inter-dental cleaning. The mean DMFT index was found to be higher with statistically significant difference among medical undergraduates: (5.04 vs. 3.38,  $p=0.010$ ); but the filled component (FT), (4.11 vs. 2.04,  $p=0.001$ ), was found to be significantly higher among dental study subjects. The decayed component of medical subjects were found to be more and statistically significant as compare to their dental peers respectively ( $4.22\pm 3.8$  vs  $2.06\pm 2.8$ ,  $p=0.001$ ).

**Conclusion:** Dental undergraduates had better oral health awareness and oral hygiene.

**Key words:** Dental Health, Dental Caries, Medical Undergraduates, Dental Undergraduates

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### INTRODUCTION

Dental diseases affect around 5 billion individuals worldwide comprising of tooth caries, dental erosion, periodontal and gingival diseases. Diseases are related to dietary and social habits of individual and have profound effect on the dental health of an individual<sup>1</sup>.

Dental caries being “a multifactorial disease” occurs due to dissolution of the tooth surface because of acid production by the micro flora; degradation of carbohydrates in presence of dental plaque present on tooth for a long time<sup>2,3</sup>. Thus there is a shift in micro-flora which alters the metabolic activity resulting in dental caries<sup>4</sup>. Furthermore, dental caries at its early

stage is reversible by use of fluoride, initially dental caries was considered to be a disease of an economically developed country with its less severity among developing countries, affecting 60 to 90% of school aged children and huge quantity of elders<sup>5</sup>. Since last three decades because of public health awareness related to effectiveness of fluoride coupled with primordial mode of prevention and enhanced self-care practices as well as organized and efficient school based preventive programs, prevalence of caries have decreased from developed countries<sup>6</sup>. However, now it is a major public health problem among developing countries because of inadequate oral hygiene practices, increase intake of sugar as well as inadequate exposure to fluoride supplements<sup>7</sup>. According to World Health Organization (WHO), dental caries is ranked as third most prevalent yet non transmittable oral disease that affect person irrespective of their demography<sup>8</sup>.

However in Pakistan, oral health trends have shown miserable results; dental caries is five times more common than asthma and seven times more common than hay fever<sup>9</sup>.

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According to analysis reported in 2004, stated that, in rural areas the total DMFT scores among permanent dentition of 12 year old was 1.59, rising to 2.26 in 15 years old children, 8.73 in 35-44 year old adults and 18.9 in individuals age 65 years and above<sup>10</sup>. Thus increasing trend of dental caries among the growing individuals had indicated need of oral health and preventive knowledge as well as restorative services.

On the other hand, it has been documented that dental health workers play a significant role in enhancement of public health education level by motivating general public to take good care of their oral health during their clinical practicing years at undergraduate level<sup>11</sup>.

Therefore, it was necessary to assess dental caries status as well as appraise self reported oral hygiene attitudes and perception of undergraduates belonging to medical and dental professionals, in order to assess their own oral health status. Therefore, the objective of this study was to assess attitudes and perceptions regarding dental hygiene of undergraduates as well as association of dental caries status among medical and dental undergraduates studying in Public Sector College.

## MATERIALS & METHODS

A cross-sectional study among medical and dental undergraduates, aged ranges from 18-23 years, was conducted in two separate colleges, Sindh Medical College and Dr. Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, Karachi. The total duration of the study was six months. A sample of 500 dental and medical undergraduate were selected through non probability convenience sampling that is, n=300 were from medical section and n=200 were from dental section. The difference in ratio is because, as the class strength of medical students is much higher that is 375 medical undergraduates while 100 dental undergraduate in each class from dental section are enrolled per year. Prior to starting the data collection, a written consent was taken from principal of the institute and verbal consent was taken from an individual study subject. Before selection of data was performed in two steps, that is distribution of the pre-tested self-administered close ended questionnaire for assessment of oral hygiene habits, tooth brushing, frequency of tooth brushing replacement as well as daily frequency of tooth brushing. Furthermore, study subjects were also inquired about frequency of dental visits and complain in first part.

The second part was based on an intra-oral examination of each study individual in order to calculate number of missing, filled and decayed teeth by following DMFT Index recommended by WHO<sup>12</sup>. A single dentist with a clinical experience of more than 3 years had

carried out examination by using sterilized set of examination instruments, in order to minimize cross infection. Statistical package for social sciences (SPSS) version 17 was used for data analysis. Means and standard deviations of quantitative variables while frequencies and percentage of qualitative variables were analyzed. Furthermore, chi-square test was applied to find out association amongst dependent and independent variables that is dental caries status in medical and dental graduates at a 95% level of significance.

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all patients for being included in the study.

## RESULTS

The final study sample was made up of five hundred students. The response rate was 93.6% (n=468) of study participants. Out of 468, 42.7% (n=200) were dental undergraduates and 57.2% (n=268) were medical undergraduates.

**Attitude towards brushing:** Majority of the study subjects 93.6% (n=468) brushed their teeth regularly, out of which 57.5% (n=269) were those who brushed twice a day and 42.5% (n=199) reported that they brush their teeth only once a day. Brushing frequency was found to be higher with statistically significance difference among dental undergraduates as compare to their medical counterparts (p=0.044).

On asking about replacing tooth brush; about 59% (n=276) of them replied once in three months, followed by 29% (n=136) stated once in six months and only 12% (n=56) reported that they only replace their tooth brush when it broke or wore out. About 18.6% (n=87) of the respondents stated that they forgot to brush often. Majority of the study participants (n=310) brushed before breakfast. 15.8% (n=74) replied that they have no fix schedule of brushing teeth, about 10.55 (n=49) stated before going to bed and only 7.5% (n=35) of them stated that they brush after breakfast.

98 percent (n=457) study subjects stated that they use dental floss for inter-dental cleaning while only 2.4% (n=11) stated that they never use it. (Table 1)

**Perception towards dental visit:** Seventy two percent (n=335) of them replied affirmatively that they had visited a dentist, about 28.4% (n=133) stated that they never visited. 35 percent (n=165) of the participants mostly dental students had stated that they visited dentist with in less than six months, 30.5% (n=143) of them visited more than two years, 19.6% (n=92) had

visited in between six months to one year period and about 14.5% mostly medical student (n=68) of the participants had visited in period of one year to two years. The frequency of dental visit was more profound and statistically significant among dental undergraduate than their medical peers (p=0.003).

Table 1-A: Descriptive analysis of Attitudes towards Brushing

Variables	Percentage (%)	Frequency (n=468)
1.Brushing teeth		
Yes	93.6	468
No	2.4	11
2.Frequency of brushing per day		
Once a day	42.5	199
Twice a day	57.5	269
3.Replacing tooth brush		
Once in 3months	59	276
Once in 6 months	29	136
Only when it breaks or wear out	12	56
4.Forgot to brush		
Never	81.4	381
Yes	18.6	87

Table 1 -B: Descriptive analysis of Attitudes towards Brushing

Variables	Percentage (%)	Frequency (n=468)
5.Time of brushing		
No regular schedule	15.8	74
In the morning	66.2	310
After breakfast	7.5	35
Before going bed	10.5	49
6.Usage of floss		
Yes	97.6	457
No	2.4	11

On inquiring about reasons of visiting the dentist, majority 62.6% (n=293) had stated that because dental pain and bleeding problems, about 26.9% (n=126) stated that they had visited only for consultations and only 10.5% (n=49) replied negatively. (Table 2)

The mean DMFT was found to be higher with statistically significant difference among medical undergraduates: 5.04 vs. 3.38 (p=0.010); but the filled component (FT), 4.11 vs. 2.04 (p=0.001), was found to be significantly higher among dental study subjects.

At the same time decayed component of DMFT was found to be higher amongst medical subjects (DT)  $4.22 \pm 3.8$  while dental subjects had  $2.06 \pm 2.8$  and hence statistically significant (p=0.001). (Table 3)

## DISCUSSION

Out of the total sample, the response rate was found to be more than three fourth. Brushing habit was found

Table 2: Descriptive analysis of Perception towards Dental Visits

Variables	Percentage (%)	Frequency (n=468)
1.Visit to dentist		
Yes	71.6	335
No	25.4	119
Do not remember	3.0	14
2.Most recent visit		
Less than 6 month	35.2	165
6 month to 1 year	19.6	92
1 year to 2 year	14.5	68
More than 2 years	30.5	143
3.Reason of visiting		
Checkups	26.9	126
Extractions, filling, scaling, gum bleeding, etc.	62.6	293
Not remember	10.5	49

Table 3: Association of Dental caries status among medical and dental undergraduates

Variables	DMFT score	p-value
Dental caries status		
Medical undergraduates	5.04	0.010
Dental undergraduates	3.38	

to be affirmative among majority of the study subjects that is more than half of the participants used to brush twice a day however, frequency of tooth brushing was found to be significantly higher among dental subjects as compare to their medical counterparts. Similarly, usage of dental floss and frequency of dental visits were found to be significantly higher among dental graduates as compare to their medical counterparts.

More than half and three fourth of the study subjects responded that they replace their tooth brush after every three months and never forget to brush respectively. Self reported questionnaire was followed by dental examination for dental caries and there was a significantly difference among dental caries status of dental and medical undergraduates, however, filled component of DMFT index was found to be statistically higher in dental subjects.

The results of the current study have shown that dental subjects were far better than their medical peers as well as they possessed high level oral health care and their attitudes and perceptions towards acquiring dental services also found to be statistically significant. These findings are in agreement with study reported by Cortes FJ and colleagues<sup>13</sup> which concluded dental students were highly motivated and had a good perception of their own dental health as well. The reason of similarity was may be because dental education exerts affirmative influence on their lifestyles.

In the current study, DMFT index was found to be higher among medical as compare to their dental counterparts because decayed component was increase in medical participants however, filled component was higher in dental subjects. These findings are in acceptance with study reported by Cortes FJ and colleagues<sup>13</sup> as dental students received all types of dental treatment during the university training and their dental education may have influenced their initiative in seeking and obtaining this treatment due to this DMFT index was higher among both groups but reason of increase DMFT in dental was restoration component as well.

In current study more than two third of the study subjects showed affirmative response about regularity in tooth brushing. These findings are in concordance with study reported by Yildiz S and Dogan B<sup>14</sup> concluded that oral health behavior and attitudes improved significantly in the fourth and fifth years of dental education. In current study we have found that more than one half and three fourth of the dental participants had showed affirmative response towards brushing attitude and perception towards dental visits which showed that they have good oral health awareness which is in disagreement with the study reported by Dogli RJ and colleagues<sup>15</sup>. They concluded that dental students in India had worst oral health knowledge and practices and they need to be improved in order to serve as positive models for selves community.

## CONCLUSION

The conclusion drawn from the current study is: dental undergraduates were found to have better oral health awareness and oral hygiene as compared to their medical counterparts.

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