Effect of Age and Gender on DMFT Index of Undergraduate Dental Students in Lahore Medical and Dental College

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Abstract

Introduction: Dental caries is an infectious micro-biological disease resulting in localized destruction of the calcified tissue.[1] Decyed, missing and filled teeth index (DMFT) have been used to measure caries status.

Objective: The purpose of this study was to determine the effect of age and gender on dental caries status.

Study Design: Cross sectional survey.

Place of Study: Indoor Department of Operative dentistry in Lahore Medical and Dental College.

Patients and Methods: In a total of 310 dental students with age ranging from 17 – 24 years were inclu-ded in the study. The duration of study was 6 months (March 2008 – August 2008). The students consent was taken before the commencement of the study. Students undergoing orthodontic treatment, amelogenesis imperfecta, and dentinogenesis imperfecta were excluded from the study. Decayed – missing – filled teeth index (DMFT) was used to measure caries status and the values were interpreted according to DMFT scoring scale.

Results: The mean DMFT score among 17 – 19 was (mean ± SD 1.42 ± 0.52), and in 20 – 24 it was (1.35 ± 0.54). After stratification of gender, mean DMFT for male student was 1.35 ± 0.51 with decay (D) component of 0.65 ± 0.61 and filled component of 0.69 ± 0.68. The Mean DMFT for female was 1.40 ± 0.55 with decay (D) component of 0.48 ± 0.61 and filled component of 0.91 ± 0.68.

Conclusion: The mean DMFT score difference was not significant between the two age groups (1.42 ± 0.52 vs. 1.35 ± 0.54; p = 0.365). There was significant difference in mean DMFT score in male dental students as they pass through different academic levels. There was no significant difference in mean DMFT score (p = 0.51) among female students.

Key words: Dental caries, DMFT index, age, gender, dental students.

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Introduction

Dental caries have remained the single most chronic childhood disease which if remains untreated, the pre-

valence and severity of caries increases in adult life.[1] It is an infectious and contagious disease creating an imbalance of normal molecular interactions between the teeth's surface / subsurface and the adjacent microbial biofilm, resulting in tooth surface demineralization, which if not treated, results in cavitation and damage to the pulp.[2]

Oral diseases are the major public health problems throughout the world. The problem with eating, chewing, smiling and communication due to decayed, damaged or missing teeth has a major impact on people's daily life being.[3]

Age and gender have impact on the dietary habits, oral health related behaviors and DMFT index. There are a high number of studies evaluating these habits among children but studies among young adults are limited.[4] Therefore this study is carried out to evaluate the effect of age and gender on DMFT index since age and gender have been considered as an important variable to affect dental caries status.[4] The objective of this study was to evaluate dental students, caries status as they are considered an important target group for the measurement of caries. Today's undergraduate students are the providers of dental services in future and are generally considered to be a good example of positive oral health attitudes and behavior to their families, patients, and friends[5]. Therefore it is important to evaluate their dental caries status and awareness of their own oral health.

Patients and Methods

The study population consisted of undergraduate students of dentistry with age range of 17 – 24 years. The sample size (310) students with 3% margin of error, 95% confidence level taking expected percentage of filled teeth (FT) as 77% among adolescent. Non-probability purposive sampling was used for this study. The students were excluded by the criteria mentioned above and their consent was taken before the commencement of the study. The investigator was taking care of students' confidentiality and insured them that their information would not be revealed to anyone. The students were examined for the measurement of dental caries status and the effect modifiers (age, sex) was determined and identified.

Students were examined in Operative department of Lahore Medical and dental college. The proforma was designed and pilot tested on 30 students. The students were requested to sit upright on the dental chair.

For every student separate set of sterilized instruments were used. The tooth was examined wet at the time of examination for caries.

The examiner stood in front of the dental chair to examine the teeth. Firstly maxillary teeth were examined for the presence of caries. Mandibular teeth followed this in the same way.

Data Analysis Procedure

Data was entered and analyzed in statistical software (SPSS – 17). Frequency and percentage were computed for categorical variables like age groups, gender, and its effect on caries status among students. Mean, standard deviation, 95% confidence interval, median with inter quartile range (IQR) were computed for quantitative variables like age and DMFT. $P < 0.05$ was considered level of significance.

Results

DMFT score of undergraduate students was presented in figure 1. DMFT score 1 was observed in 129 (41.6%) student, score 2 was 66 (21.3%) student and DMFT score 3 was observed in 5 (1.6%) student, reflecting low caries status according to DMFT scoring scale. Total DMFT score (1 – 3) were found in 65% (200/310) undergraduate dental student while 35% (110/310) students were free from caries (DMFT = 0) as shown in figure 2. Dental Caries was observed in 95 students (30.65%), 2 have missing teeth (missing due to caries) and 134 (43.2%) have filled teeth. In first year old DMFT score 1 was present in 21 (53.8%) of dental students, DMFT score 2 was present in 18 (46.2%) and DMFT score 3 was present in 0 (0%) dental students. For 2nd year, DMFT score 1 was present in 20 (52.6%), DMFT score 2 was present in 16 (42.1%) dental students and DMFT score 3 in 2 (5.3%) dental students. For 3rd year following DMFT scores were found. DMFT score 1 in 34 (73.9%), DMFT score 2 in 11 (23.9%) DMFT score 3 in 1 (2.2%) dental students. .For final year DMFT score 1 was present in 27 (71.1%) dental students, DMFT score 2 and 3 were present in 10 (26.3%) and 1 (2.6%) dental students respectively. For first year new following DMFT score were found. DMFT score 1, 2, 3 were present in 27 (69.2%), 11 (28.2%) and 1 (2.6%) dental students. There were 63.9% (36/61) 1st years old student having total DMFT score (1 – 3), 63.3% (38/60) in 2nd years, 66.7% (46/69) in 3rd years, 59.4%

(38/64) in final years and 69.3% (39/56) in first year new students having DMFT score (1 – 3). Out of 200 student who have DMFT score (1 – 3), 73 (36%) were male and 128 (64%) were female.

Likewise DMFT score with respect to age groups is shown in table 1. The DMFT score was found to be low in the two age groups. In 17 – 19 year old dental student DMFT score 1 was present in 59%, DMFT score 2 was present in 39.7% dental students and DMFT score 3 was present in 1.3% dental students. Similarly for 20 – 24 year old students, the DMFT score 1 was present in 68%, DMFT score 2 was present in 28.7% and DMFT score 3 was present in 3.3% dental students.

The mean DMFT score among 17 – 19 was (mean ± SD 1.42 ± 0.52) and in the age group 20 – 24 it was (1.35 ± 0.54). The Mean DMFT difference was not significant between the age groups (1.42 ± 0.52 vs. 1.35 ± 0.54; p = 0.365).

After stratification of gender, mean DMFT for male was 1.35 ± 0.51 with decay (D) component of 0.65 ± 0.61 and filled component of 0.69 ± 0.68. There was significant difference in mean DMFT score among the academic level (p = 0.047) similarly the decay component of the mean DMFT was significantly (p = 0.003) decreased and filled component significantly increased (p = 0.0001) in academic level as presented in table 2.

Mean DMFT for female was 1.40 ± 0.55 with decay (D) component of 0.48±0.61 and filled component of 0.91 ± 0.68 shown in table 3. There was no significant difference in mean DMFT score among the academic level (p = 0.51).
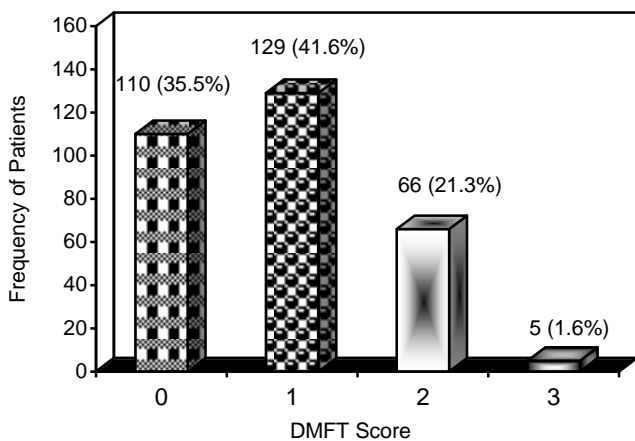

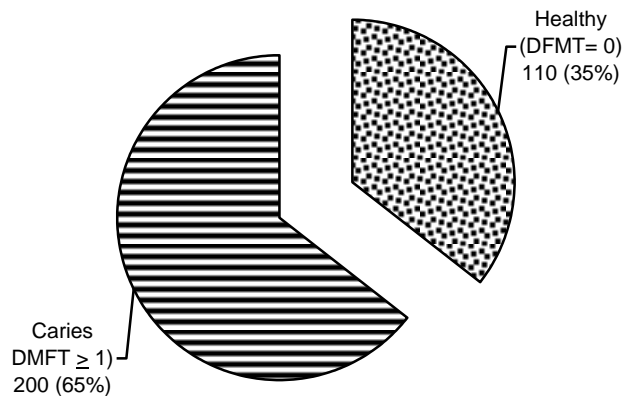**Figure 1**: DMFT score among undergraduate students n = 310.

Figure 2: Dental caries status among undergraduate dental students n = 310.

Table 1: Mean DMFT score with respect to age

DMFT Score	Age groups (Years)		Total
	17 to 19	20 to 24	
1	46	83	129
2	31	35	66
3	1	4	5
Total	78	122	200
Mean ± SD	1.42 ± 0.52	1.35 ± 0.54	P = value 0.365

Mean DMFT difference was not significant between age groups (1.42 ± 0.52 vs. 1.35 ± 0.54; p = 0.365).

Discussion

Age and gender have impact on the dietary habits; oral health and DMFT index.[4] In the present study dental students have been divided in two groups, 17 – 19 and 20 – 24 years. The DMFT score was found to be low caries status in both the groups with respect to age. The mean DMFT difference was not significant between the age groups. This could be explained by the fact that with selected age group (17 – 24) comprised of students with almost similar pattern of life style, eating habits etc. It is difficult to obtain wide range of variation in their DMFT scoring because the age group is quite specific. This could not be the same when students from a wide range of ages were selected. However contrasting results have been obtained in a study done on Mexican adolescents. The age range was from 16 – 25 years. The results revealed that the dental

Table 2:
Mean DMFT score among male dental students.

Professional Year	n	Mean Decay	Mean Missing	Mean Filled	Mean DMFT
1st Years (Old)	10	1.10 ± 0.57	–	0.10 ± 0.32	1.20 ± 0.42
1st Years (New)	15	0.93 ± 0.59	–	0.33 ± 0.49	1.27 ± 0.45
2nd Years	16	0.63 ± 0.62	–	1.06 ± 0.68	1.69 ± 0.60
3rd Years	24	0.42 ± 0.50	–	0.83 ± 0.64	1.25 ± 0.44
4th Years	7	0.29 ± 0.48	–	1.00 ± 0.82	1.29 ± 0.48
Overall All	72	0.65 ± 0.61	–	0.69 ± 0.68	1.35 ± 0.51
P-Values		0.003	–	0.0001	0

Table 3:
Mean DMFT score among female dental students.

Professional Year	n	Mean Decay	Mean Missing	Mean Filled	Mean DMFT
1st Years (Old)	29	0.83 ±0.65	–	0.72 ± 0.70	1.55 ± 0.51
1st Years (New)	24	0.75 ± 0.67	–	0.63 ± 0.64	1.38 ± 0.57
2nd Years	22	0.36 ± 0.58	0.05 ± 0.21	1.00 ± 0.61	1.41 ± 0.59
3rd Years	22	0.18 ± 0.39	–	1.14 ± 0.56	1.32 ± 0.56
4th Years	31	0.23 ± 0.42	0.03 ± .18	1.06 ± 0.68	1.32 ± 0.54
Overall All	128	0.48 ± 0.61	0.02 ± 0.12	0.91 ± 0.69	1.40 ± 0.55
P-Values		0.0001	0.56	0.022	0.51

caries' severity was higher as age is increased as measured through DMFT.[6] Contrasting to the present study there was significant difference observed between the mean DMFT scores of the Mexican female university students with various age groups (18 – 23).[6] Similarly study done at Kaunas University showed DMFT scores were shifting with age.[7]

In the present study after stratification of gender, Mean DMFT for male was 1.35 ± 0.51 (low caries status) with decay (D) component of 0.65 ± 0.61 and filled component of 0.69 ± 0.68. There was significant difference in mean DMFT score among the academic level (p = 0.047).Similar trends have been obtained in male under graduate students in King Saud University.[8] Similarly mean DMFT for female was 1.40 ± 0.55 (low caries status) with decay (D) component of 0.48 ± 0.61 and filled component of 0.91 ± 0.68. There was no significant difference in mean DMFT score among the females. However the decay component of the mean DMFT was significantly (p = 0.0001) decreased and filled component significantly increased (p = 0.022) in academic level.

Researchers have found females to engage in better oral hygiene behavioral measures, dental caries status, possess a greater interest in oral health, and perceive their own oral health to be good.[9] In contrast a higher DMFT score of 6.30 amongst female dental students has been found in students in China.[10] Similar trends of higher DMFT score in females' students have been found in young Mexican female students and the caries severity increased with age.[6] This increased caries status could be attributed to hormonal fluctuations during puberty, menstruation and pregnancy, frequent habit of snaking between meals and during food preparation plus the earlier eruption of teeth in female.[11,12]

Conclusion

The DMFT score was found to be low in both the age groups with respect to age. The mean DMFT difference was not significant between the age groups in dental students.

There was significant difference in mean DMFT score in male dental students as they pass through different academic levels.

There was no significant difference in mean DMFT score in females among the different academic levels. However the decay component of the mean DMFT was significantly decreased and filled component significantly increased in different professional years.

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