Journal of Dental Applications

Austin Publishing Group

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Research Article

A Comparative Study of Oral Health Attitudes and Behaviors in Dental Students

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Received: May 09, 2014; **Accepted:** June 11, 2014; **Published:** June 13, 2014

Abstract

Objective: The aim of this study is to compare oral health attitudes and behaviors between preclinical and clinical dental students.

Material and Methods: A questionnaire was prepared regarding oral health attitudes and behaviors. The survey was carried out at a faculty of dentistry in Ankara, Turkey. 528 questionnaires were responded by dental students (366 preclinical and 162 clinical students). Age, gender and and academic year data were also recorded. Data was statistically analyzed by Pearson's Chi-Square tests.

Results: Most of the preclinical students received oral hygiene instructions from their families (45%), and clinical students from university (37%). Almost all of the students (96% of both group) used manual toothbrush. The strengthening effect of the fluoride in the toothpaste was known by 95% of clinical and 63% of preclinical students. 57% of the clinical students underwent to professional dental care once or twice a year, while 45% of the preclinical students were not aware about dental care requirements. The responses varied to the question about criteria of choosing toothpaste. Ingredient (36% and 43% for preclinical and clinical, respectively) and price (15% and 20% for preclinical and clinical, respectively) of the toothpaste were the most frequent reasons. Eleven percent of preclinical and 18% of clinical students were smokers.

Conclusions: The outcomes of this study show that oral health and behavior of dental students increased with professional education but behaviors regarding use of oral rinse, use amount of water after brushing and use of toothpick didnot substantially improve.

Keywords: Oral health behavior, Dental student, Survey, Turkey.

Introduction

Dental students, the future leaders in oral health care, have an important role in educating and promoting public oral health [1-3]. Dental students in general have been found to have a positive attitude towards oral health [4,5]. Oral health behavior of dental students must be improved if they are to serve as positive models for their patients, families and friends [6-9].

There were several studies about oral health attitudes and behavior of dental students [10-25]. Most of these researches were carried out using the Hiroshima University Dental Behavioural Inventory (HU-DBI) questionnaire developed by Kawamura [10-20]. HU-DBI has first been administered in Japan and demonstrated to be a useful instrument in understanding the perceptions of patients and oral health behavior. Then, it has been used for evaluating the differences in oral health behaviors between dental students from different countries due to the curriculum dissimilarities of dental students and variety between the cultures [26]. Some participants in the survey were from all academic years [10-17], and others were from only final years of university [20-22]. Peker et al. [15] and Yildiz et al. [16] compared the oral health attitudes and behavior of preclinical students to clinical students. Tseveenjav et al. [24] evaluated cross-sectional and longitudinal comparison among clinical dental students. Rong et al. [25] administered HU-DBI questionnaire to medical and dental students when they were in years 1 and 5 of their university.

Most of researches about oral health attitudes and behavior of dental students in Turkey had a common method that the HU-DBI questionnaire was administered [14-17]. A structuredquestionnaire on oral health behavior of dental students was developed for this study. The study aimed to explore the effect of educational training experience on oral health behaviors of dental students.

Materials and Methods

Before conducting a full-scale survey, an 18-item questionnaire was administered to a population of 35 subjects for pretesting. The main survey was conducted at the Faculty of Dentistry, Gazi University, Ankara, Turkey. Dental school education in Turkey takes 5 years. Dental students spendfirst 3 years in preclinics and last 2 years in clinics. The questionnaire was carried out among 528 volunteer dental students at the end of the academic year 2012-2013. Among 528 participants, 366 of them were preclinical students and 162 of them were clinical students. The survey was completed anonymously. Questions were shown in Table 1. Age, gender and academic year data were also recorded. Distribution of number of the students according to their academic years were as follows:150 in the first class (28%), 109 in the second class (21%), 107 in the third class (20%), 83 in the fourth

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Citation: Özyemişci-Cebeci N, Ünver S and Nemli SK. A Comparative Study of Oral Health Attitudes and Behaviors in Dental Students. J Dent App. 2014;1(1): 3-7.

Table 1: Questionnaire.

Age:	Gender:	Academic year:
1.	How have you received oral hygiene education? No instruction ( ) From parents/family ( ) From dentist ( ) From advertisement, brochures( ) From university/lessons ( ) Other ( )	
2.	What is the frequency of replacing your toothbrush? 3 months ( ) 6 months ( ) 1 year ( ) More than 1 year ( )	
3.	Do you use regular or electric toothbrush? Regular ( ) Electric ( ) Both regular and electric( )	
4.	How many times do you brush your teeth daily? Less than once a day ( ) Once a day( ) Twice a day ( ) Three times a day( )	
5.	How long do you brush your teeth? Half a minute or less( ) 1 minute ( ) 1-2 minutes ( ) 2 minutes ( ) More than 2 minutes ( )	
6.	Do you rinse your mouth with water after? Never( ) Occasionally ( ) Often ( ) Always ( ) Never considered( )	
7.	How much water do you use for rinsing? A handful ( ) 2 handfuls ( ) Half a glass of water ( ) A full glass of water ( )	
8.	What determines which toothpaste you use? Price ( ) Taste ( ) Advertisements ( ) Uses what's at home ( ) Do not know ( ) Other ( ) Toothpaste's ingredient ( )	
9.	How much toothpaste do you put on your toothbrush? Size of a pea ( ) 1 cm ( ) 2 cm ( ) Never considered ( )	
10.	What is the effect of fluoridein toothpaste? Makes teeth whiter ( ) Strengthens the teeth ( ) Clean teeth ( ) Makes your mouth fresh ( ) Do not know ( )	
11.	Do you clean between your teeth? Yes ( ) No ( )	
12.	Do you use interdental brush or dental floss on regular basis? Yes ( ) No ( )	
13.	Do you use toothpick? Yes ( ) No ( )	
14.	Do you use mouth rinse? Yes ( ) No ( )	

15.	How often do you go to dentist for professional dental care? 6 months ( ) 1 year ( ) More than 1 year ( ) Do not know ( )
16.	How do you use toothbrush when you brush your teeth? Horizontal motion ( ) Vertical motion( ) Circular motion ( ) 45 degree oblique ( )
17.	Do you consume sugary products between meals? Less than once per day ( ) More( )
18.	Do you smoke? Yes ( ) No ( )

class (16%), 79 in the fifth class (15%).

Differences between gender and oral health behaviors, between every academic year and oral health behaviors were examined. Oral health behaviors of preclinical students and clinical students were compared. The data was analyzed using the SPSS version 10.0 software package (IBM, New York, USA). Pearson's chi-square test was used to test for significant differences.

Results

Sixty-seven of all participants were female and 33% of the participants were male. Forty seven percent of the students were 15-20 years old, 51% was 21-26, 1% was 27-32 and 1% was older than 33 years old. The distribution of students according to their academic years were 28% in the first year, 21% the second year, 20% the third year, 16% in the fourth year and 15% in the last year.

There were variety of toothpaste selection criteria ($p<0.05$). The most frequent toothpaste selection reason for both groups was the content of the toothpaste (preclinical 43%, clinical 36%). The second most prominent reason was the toothpaste available in the house (preclinical 15%, clinical 20%) (Figure 1).

Origin of oral hygiene education significantly differed among students($p<0.001$). The most frequent answer to education origin was "family" for the preclinical students (45%) and "lessons at university" for the clinical students (37%) (Figure 2).

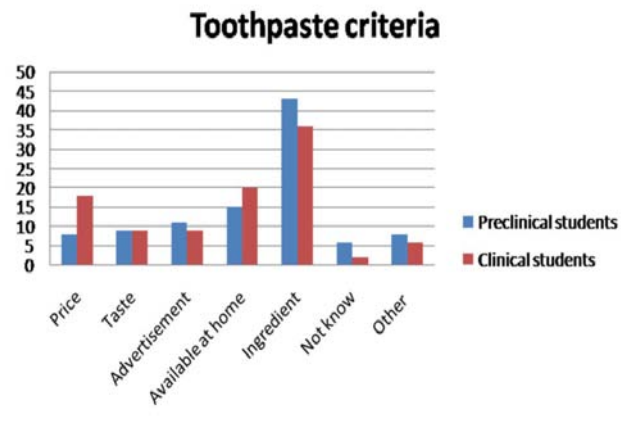

Figure 1: Criteria for toothpaste selection.

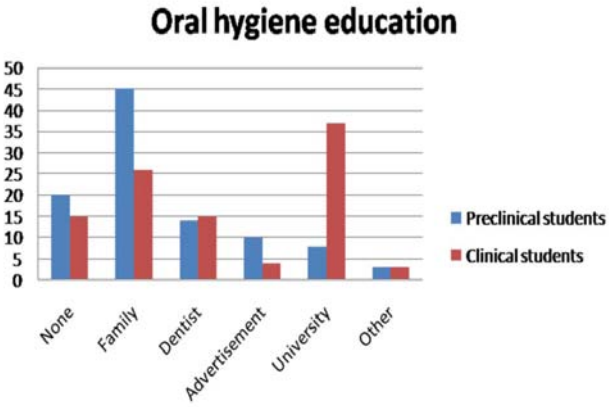

Figure 2: Origin of oral hygiene education.

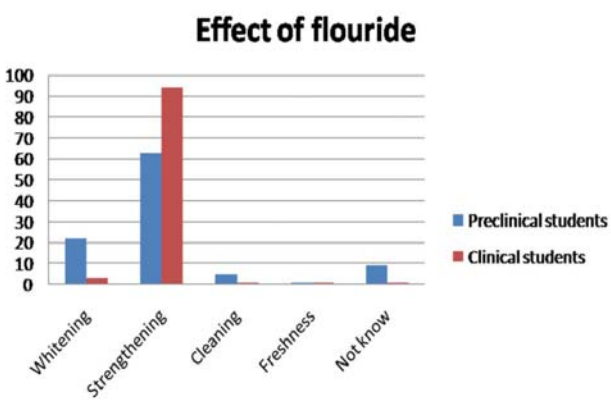

Figure 3: Knowledge about the effect of flouride.

Knowledge about the effect of fluoride was significantly different between 2 groups ($p<0.001$). Sixty-three of preclinical and 95% of clinical students thought that the effect of fluoride in toothpaste was to strengthen the teeth (Figure 3).

Different options were chosen for the amount of toothpaste used during brushing ($p<0.001$). Majority of the respondents, 53% preclinical and 80% clinical students, answered that they used a pea sized toothpaste (Figure 4).

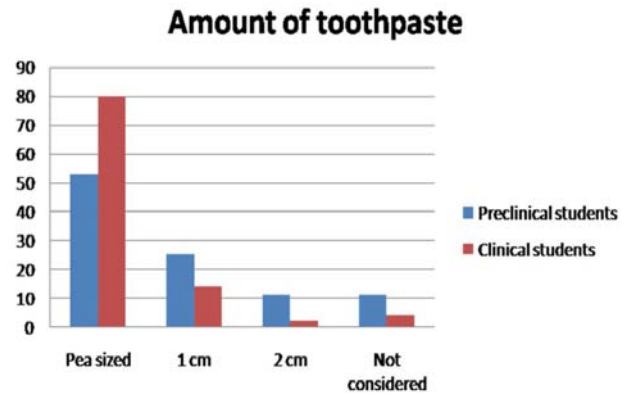

Figure 4: Amount of toothpaste used.

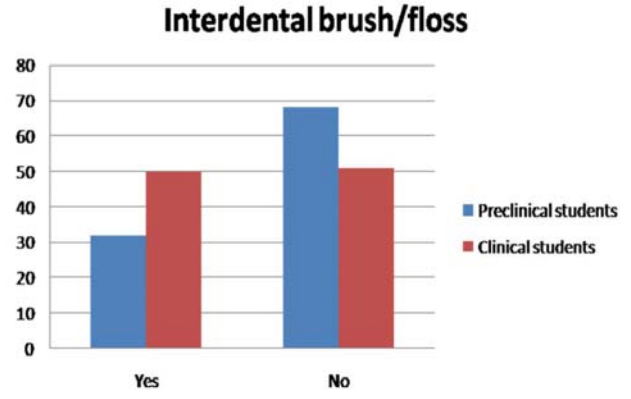

Figure 5: Usage rates of dental floss.

Technique of tooth brushing differed among 2 educational groups ($p<0.001$). Fifty-one percent of the preclinical students brushed their teeth with circular motion and this ratio was 25% for clinical students. Forty seven percent of the clinical students and 20% of the preclinical students brushed with 45 degreed oblique motion.

The answers to professional care frequency were also significantly different ($p<0.001$). Most of the students were lack of this information. Usage of dental floss was at the rate of 32% among the preclinical students and 49% among the clinical students($p<0.001$) (Figure 5).

There was statistically significant difference between preclinical and clinical students' smoking habit ($p<0.05$). Eleven percent of the preclinical students and 18% of the clinical students were smokers. Also smoking habit was significantly different between male and female students ($p<0.001$). Seven percent of all females and 25% of males were smokers. Thirty five percent of all smokers were female and 65% of all smokers were male.

According to results, there were no differences between preclinical and clinical students' answers to the items about type of toothbrush, replacing time of toothbrush, frequency and duration of brushing, amount of water during rinsing, interdental care, mouthwash and sugar consumption ($p>0.05$).

Discussion

This study compared knowledge and oral health behavior of preclinical and clinical dental students in Gazi University, Faculty of Dentistry.

In the literature, there was no data detected about criteria for choosing toothpaste, oral hygiene education, knowledge of fluoride effect, amount of toothpaste used during brushing among dental students. Although higher consciousness of choosing toothpaste was expected from senior dental students, the rate of choosing toothpaste according to the ingredient was higher in the preclinical group. This may due to socioeconomic factors. Because choosing toothpaste according to its price was reported in a higher rate by clinical students. If socioeconomic factors were included in the study, it would be possible to evaluate this parameter as a factor.

While 37% of clinical students expressed that they had oral hygiene education from lessons at the university, only 8% of preclinical students gave the same answer. Clinical experiences might be more influential than theoretical training.

Majority of clinical students had correct information about effect of fluoride which was to strengthen the teeth (95%). The rate of having this information was 63% for preclinical group. Whereas 22% of preclinical group thought fluoride whitened teeth, only 3% of clinical group thought the same.

Fifty-three percent of preclinical and 80% of clinical students reported use of pea sized toothpaste during brushing. Professional training may cause an increase of awareness about use of toothpaste.

Technique of brushing was not satisfying in both groups. Less than half of all students brushed their teeth with 45 degreed oblique motion. At the end of a survey among Turkish dental students, Ulu et al., [27] reported 1% of all dental students used "sweep motion" as brushing method.

Usage of dental floss was at the rate of 32% among the preclinical students and 49% among the clinical students. These rates are higher than the results obtained in a research in India (1st year 22%, 5th year 14%) [11]. In a similar study in Turkey, the rates for preclinical students were 19% and for clinical students was 31%.[16] In China, 4% of 1st year and 22% of 5th year used dental floss at least once a week [25].

Eleven percent of the preclinicalstudents and 18% of the clinical students were smokers. Incidence of smoking among preclinical students was higher than first year students in India. Incidence of smoking among clinical students was lower than final year students in India [23]. In a previous study performed in 3 different faculties of dentistry in Turkey in 2011, smokers among preclinical students were 22% and clinical students were 33% [16]. Although one of 3 faculties presented in that previous study was the same faculty used in this study, the incidence of smoking was higher than our results. The difference in incidence may be due to other 2 participant faculties.

Positive changes were observed between preclinical and clinical students reflecting educational experience. Professional dental education tended to positive effects on students' oral health attitude and behavior as supported by several studies in different countries

[15,16,23-25,27]. However, not all behaviors were improved in this study. Usage of dental floss, knowledge about amount of toothpaste need to be used, brushing technique and knowledge about benefit of fluoride were increased. On the other hand, there were no noticeable change in duration and frequency of brushing.According to results, use of toothpick did not decrease with dental education. Sugar consumption of both preclinical and clinical students was similar. This may be just a dietary habit instead of imperfect knowledge about the effect of sugar on the teeth.

This study is limited with a questionnaire. To research the effect of education, cross-sectional and longitudinal comparisons would be more useful. Because personal differences between students may predominate over education. Clinical examination besides questionnaire would probably affirm the results.

Conclusıon

The results of this study indicate that dental health and behavior of dental students increased with professional education. However, some issues like use of oral rinse, amount of water used after brushing and hazards of toothpick to periodontal tissues should be emphasized in the related lessons.

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J Dent App - Volume 1 Issue 1 - 2014
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Citation: Özyemişci-Cebeci N, Ünver S and Nemli SK. A Comparative Study of Oral Health Attitudes and Behaviors in Dental Students. J Dent App. 2014;1(1): 3-7.