

# Students' Behavior Related to Oral Health

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## Abstract

**Introduction:** Oral health significantly affects the quality of life. Behavior is a very important determinant of oral health, which is related to oral hygiene, diet, regular visits to the dentist and smoking. Students are interesting research group to study an oral-health behavior, particularly dental students, because of their knowledge and attitudes about oral health greatly affect the proceedings in their further work which is important for the health of the population.

**Objective:** The objective was to evaluate the oral health behavior of dental students of the Medical Faculty in Podgorica and the Faculty of Political Science in Podgorica.

**Materials and Methods:** The study included 125 students. The survey instrument was a questionnaire of closed type, containing questions about oral hygiene, visits to the dentist, as well as questions about nutrition and consumption of tobacco.

**Results:** The study showed that students take care of their oral health; 75.2% brush their teeth 2 to 3 times a day, and 54.4% goes to examinations every 3 - 6 months. Results also indicated that there are certain problems that require health-educational measures, such as a lack of knowledge about fluoride as an element of dental caries prevention, as well as the insufficient use of additional funds for oral hygiene, such as dental floss and interdental brushes.

**Conclusion:** The study showed that students take care of their oral health, but there is a need for continuous education programs on the importance and protection of oral health. Dental students have shown a bit better results.

## Keywords

Oral health, behavior, students, dental hygiene, dentistry

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## 1 Introduction

Oral health significantly affects the quality of life. The presence of oral disease reduces the feeling of self-esteem, affect the diet, as well as the ability to communicate and the overall health both in childhood and in the elderly [1]. Today, aesthetic role of teeth is also very important. Considering that the main cause of dental and periodontal disease is dental plaque, oral hygiene, which involves the complete removal of it, may be considered the dominant determinant of oral health [2].

Behavior is a very important determinant of oral health [3, 4]. When talking about behavior which is important for oral health, we primarily refer to the maintenance of oral hygiene, diet and regular dental visits.

Adequate oral hygiene is the most efficient and simplest method of preventing tooth decay. Removing plaque from all tooth surfaces requires the use of additional funds for oral hygiene, in addition to a toothbrush and toothpaste. These are different interdental brushes, gingi-

val toothbrushes, dental floss, mouthwash solutions, etc. [5, 6].

Smoking, the most common form of health-risk behavior, contributes to the development of periodontal diseases and causes greater resorption of alveolar bone [7].

A very important factor in maintaining oral health is a proper diet [8]. Frequent consumption of refined carbohydrates influences the appearance of cavities [9]. Dental plaque bacteria's degradation of carbohydrates release acids that favor the demineralization of tooth enamel, a process that marks the beginning of the creation of the carious lesion.

Regular check-ups at the dentist are also very important, because the dentist can detect initial carious lesions and react promptly.

The use of fluoride is an important preventive measure. Fluoride prevents initial demineralization of tooth enamel and have the inhibitory effect on the metabolism of cariogenic bacteria [10].

In addition to the measures already described, the health educational work with the population has an im-

Table 1: Frequency of toothbrushing in relation to faculty and sex.

Frequency of toothbrushing	Dentistry		Faculty of Political Science	
	Male	Female	Male	Female
More than 3 times	5 (15.6%)	5 (12.2%)	1 (10%)	13 (31%)
2 – 3 times	26 (81.3%)	36 (87.8%)	7 (70%)	25 (59.5%)
Once a day	1 (3.2%)	/	2 (20%)	4 (9.5%)
Never	/	/	/	/
Total	32 (100%)	41 (100%)	10 (100%)	42 (100%)

Table 2: Usage of various types of toothbrushes and frequency of changing toothbrushes in correlation with the faculty.

Types of toothbrushes	Frequency of changing toothbrushes							
	Dentistry				Faculty of Political Science			
	Monthly	When the fibres change	2-6 months	Doesn't follow	Monthly	When the fibres change	2-6 months	Doesn't follow
Soft or ultra-soft	12 (24%)	24 (48%)	11 (22%)	3 (6%)	4 (40%)	4 (40%)	2 (20%)	
Medium	3 (13.6%)	10 (45.5%)	9 (40.9%)	/	12 (32.4%)	14 (47.8%)	10 (27%)	1 (2.7%)
Hard	/	1 (100%)	/	/	3 (60%)	1 (20%)	1 (20%)	
Doesn't use toothbrush	/	/	/	/	/	/	/	/
Total	15	35	20	3	19	19	13	1

portant role in maintaining and improving oral health [5]. Therefore, dental health education should be part of general education [2].

Application of fluoride in addition to public health care programs in the Nordic countries has caused a significant drop in caries prevalence [11].

Students, as part of the population that has a significant role in the development of any society, are a very interesting research group to study the oral health behavior.

The students of dentistry are very important because their knowledge and attitudes about oral health and preventive measures greatly affect the proceedings in their further work which is of great importance for the health of the population.

Numerous studies have shown that students of dentistry have a higher level of knowledge and take better care of oral health compared to students of other faculties [12, 13]. It was shown also that their behavior in relation to oral health changes during the years of study; senior students demonstrate better results [14].

In Montenegro, studies which should show oral health behavior of students had never been implemented. Similar studies done in school children in Montenegro have indicated the need for continuous educational programs on oral health and hygiene of the mouth and teeth [3, 15]. The aim of the research is to investigate the oral health behavior of students of Dental Medicine and the Faculty of Political Science in Podgorica.

## 2 Material and Methods

The survey was conducted from February to April 2016, at Department of Dentistry, Medical Faculty in Podgorica and the departments of Social Work and International Relations, Faculty of Political Sciences in Podgorica. The study included 73 dental students and 52 students of the Faculty of Political Science. All students have voluntarily agreed to participate in the study after they have been explained about the purpose of the test, and the participation rate was 100%. Respondents answered all the questions, which means that the response rate was 100%. The survey instrument was questionnaire which was created following the examples on similar research conducted in Turkey and Greece [16, 19].

The questionnaire consisted of 17 questions. The first group of questions has been related to general information about the respondents - gender, study program and year of study they attend. The next group of questions has been related to oral hygiene: how often do they brush teeth, which means for oral hygiene they use, what kind of toothbrush they use and how often they change it.

There was also a set of questions, related to the dental visit (how often they go to the dentist, which are the most common reasons for visits) as well as the role of dentists in health education. Respondents were also asked about the prevention of oral diseases and the availability of information about oral health, as well as about nutrition and tobacco use.

For statistical analysis were used basic methods of descriptive and inductive statistics. As statistically significant p-values were taken those less than 5% ( $p < 0.05$ ).

### 3 Results

The study included 125 participants - 73 students of the Faculty of Medicine, department Dentistry and 52 students of the Faculty of Political Sciences. Among the respondents there was 66.4% females (Figure 1).

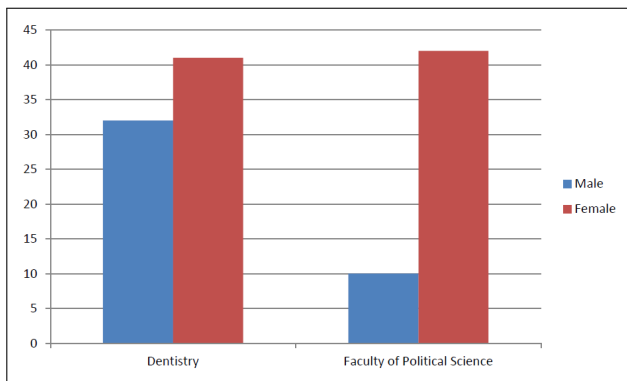


Figure 1: Distribution of the number of respondents by gender and faculty.

The largest number of respondents (75.2%) brush their teeth 2 to 3 times a day (Table 1). Of the total number of future dentists, 13.7% of them brush their teeth more than three times a day, while among the students of Political Science, there are slightly more of them (26.9%).

When it comes to the type of toothbrush the respondents use, it was observed that there is a correlation between the use of certain toothbrushes and faculty they attend (Pearson correlation coefficient  $r = 0.485$ ,  $p < 0.001$ ). Unlike the kind of toothbrush, statistical analysis shows that there is no correlation between the frequency of changing toothbrushes and faculty students attend ( $r = 0.243$ ,  $p > 0.05$ ), and no correlation with sex ( $r = 0.138$ ,  $p > 0.05$ ). Most students (43.2%) change the brush when recognizing that the fibers are changed (Table 2).

The data show that there is a statistically significant difference in the use of toothpaste containing fluoride between the students of the Faculty of Political Science and Dentistry students ( $r = 0.704$ ,  $p < 0.001$ ). Of the total number of students of Political Science 71.2% do not know whether their toothpaste contains fluoride, while the majority of future dentists (87.7%) use toothpaste with fluoride, as shown in Table 3.

Statistical analysis of data showing the frequency of use of additional funds for oral hygiene, such as dental floss and interdental brushes, indicates that there are differences in their use among future dentists and students of Political Science ( $r = 0.264$ ,  $p < 0.05$ ). Of the total number of dental students, 31.5% of them use additional funds, while 13.5% of students of political science is not informed of the existence of an additional funds for the oral hygiene, as shown in Table 4.

### 4 Discussion

Research has shown that students take care about oral health, but there are problems that require a public health intervention. As expected, the dental students show better results. A similar study conducted in Turkey showed that only 12% of the tested students regularly go to dental check-ups, while Montenegrin students show better results - 54.4% of respondents every 3 - 6 months visit the dentist, which can be a result of the fact that our students don't pay for dental services [16].

Research has shown that students of the Faculty of Political Science do not have enough knowledge about fluoride, as an important element of dental caries prevention; 71.2% of them don't know if their toothpaste contains fluoride, while expected, the majority of future dentists (87.7%) use toothpaste with fluoride. Half of Turkish students (52.7%) use toothpaste with fluoride [16].

The study shows that 57.6% of respondents had training on proper tooth brushing, which are similar results as in Turkey (57.3%) [16].

Expectedly, dental students showed knowledge of the proper choice of toothbrush - 68.5% use a soft or ultra-soft brush, which is today considered to be optimal for maintaining oral hygiene, while most students of political science (71.2%) use medium brush. The survey conducted in Hiroshima, which compared oral-health behavior between dental and civil engineering students, also showed that future dentists have more knowledge about the proper choice of toothbrush [17]. Data showing the use of additional funds for oral hygiene are not satisfactory; only 24.8% of students use of dental floss and interdental brushes every day. This is a slightly better result than that achieved in Belgrade adolescents, of whom 13.4% use dental floss [4].

One third of future dentists (31.5%), use dental floss and interdental brushes every day, which is unexpectedly bad result.

Almost all respondents (84.8%) agree that the public in Montenegro is not sufficiently informed about the importance of oral health and prevention of oral diseases, which indicate a need for oral- health programs.

A similar research in Montenegro, conducted among school children, also indicated a need for education on the conservation of oral health [3, 15].

A similar survey of oral health behavior in Foca, which included schoolchildren, shows that respondents most often go to the dentist when they have toothache (51%), while our students expected, due to the difference in age, show better results - the most common reason for visiting the dentist (69.6%) are regular checks [18].

The survey of oral health behavior of medical students in Greece shows that 51.25% of respondents go to the dentist when they have toothache, which are inferior results compared to the our study [19]. Future dentists in Peru also show worse results, compared to our students; 28% of first year students and 6% of fifth year students go to the dentist when they have toothache [20].

Table 3: Correlation between usage of fluoride toothpaste and faculty.

Fluoride toothpaste	Dentistry	Faculty of Political Sciences
Yes	64 (87.7%)	9 (17.3%)
No	3 (4.1%)	6 (11.5%)
Doesn't know	6 (8.2%)	37 (71.2%)
Total	73 (100%)	52 (100%)

Table 4: Distribution of usage of additional funds for oral hygiene by gender and faculty.

Usage of additional funds for oral hygiene	Dentistry		Faculty of Political Science	
	Male	Female	Male	Female
Yes, every day	8 (34.8%)	15 (65.2%)	/	8 (100%)
Yes, sometimes	24 (49%)	25 (51%)	7 (18.9%)	30 (81.1%)
Doesn't know for additional funds	/	1 (100%)	3 (42.9%)	4 (57.1%)
Total	32	41	10	42

The data showed that 79.5% of dental students does not have the problem with bleeding gums when brushing teeth, which indicates adequate maintenance of oral hygiene. Of the total number of tested medicine students in Greece, 7.25% of them have problems with bleeding gums when brushing teeth, which was better results than ours, where on the question of gingival bleeding positively responded 24.8% of students [19]. Results similar to ours were obtained in the study in Peru; 31% of first year students and 9% of fifth year students have problems with bleeding gums [20].

The results show that a relatively small number of students (14.4%) have bleached teeth, mainly at home (8%). The results of research in Turkey, show that an even smaller number of respondents (3.7%) have bleached teeth [16].

Data on the use of tobacco showed that among students there are 21.6% of smokers. These are slightly better results compared to the testing of the student population in Kosovo, where there is 27% of smokers and in Novi Sad (26.7%), while among the tested adolescents in Belgrade there was 23.3% of smokers [4, 21, 22].

When it comes to diet, the results are relatively satisfactory; 46.4% of students consume fruit several times a day, while 32.8% of them eat vegetables once a day. However, it is worrying that 31.2% of respondents eat sweets several times during the day, which is in direct correlation with caries [9, 23].

## 5 Conclusion

The survey showed that respondents take care of their oral health, but there is a requirement for continuous educational programs of the importance and preservation of oral health. Dental students show better results, which is of particular importance because it is their future work of importance for the health of the population.

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