

ASSESSMENT OF THE ORAL HEALTH RISK FACTORS IN YOUNG PEOPLE

Alice Murariu¹, Doriana Agop Forna^{2*}, Florentina Manolache³, Norina Consuela Forna⁴

University of Medicine and Pharmacy "Grigore T. Popa" Iasi, Faculty of Dental Medicine

^{1, 2} Departement of Surgicals

³ Faculty of Dental Medicine, graduated

⁴ Department of Oral Implantology and Prosthodontics

* Corresponding author, e-mail: drdorianaforna@gmail.com

ABSTRACT

The aim of our study is to identify the risk factors involved in oral health in a group of students from 2 universities in Iasi with different profile, medical and non-medical and to highlight the cases with inappropriate health behavior. **Material and methods:** A cross-sectional survey was conducted in 2016 and was selected a sample of 110 students from University of Medicine and Pharmacy "Grigore T. Popa" (UMF) and University "Al.I.Cuza" (UAIC) of Iasi. The risk factors were assessed with a questionnaire with 12 questions divided in two sections: first section-dietary habits concerning sweet foods, carbonated drinks, fruits and vegetables consumption and oral hygiene, and other risk factors for oral health such as: smoking, alcohol consumption and dental check-ups, in second section. **Results:** There were no differences between students, regarding the consumption of cariogenic food, 28.8% students from UMF, compared to 29.9% students from UAIC. The daily drinking of carbonated drinks is an unhealthy habit among 3.4% of medical students and 7.8% non-medical young people. Regarding oral hygiene, there are more students from medical university who used mouthwash, 55.6% versus 43.5% and also for brushing after each meal, 13.3% compared to 3.9%. No significant differences were observed between groups for alcohol consumption, dental check-ups and the reasons for seeing a dentist. **Conclusions:** The knowledge and attitudes towards healthy life is not high correlated with the medical profile, because life style depends also on the family behavior, friends' influences and educational role of the universities. This study highlights the importance of educational courses for health in university curriculum.

Keywords: oral health, risk factors, students, university profile

INTRODUCTION

Health state depends on numerous interrelated factors such as the genetic heritage, the social position, and options in terms of lifestyle behaviours, attitudes and values adopted in relation to the risk factors for health [1]. In recent years there has been a trend that exerts a strong negative influence on health, in general, and on oral health, in particular [2]. Here we are talking about the increase of the number of smokers and alcohol consumers at earlier ages as well as the exaggerated consumption of carbonated drinks and concentrated sweetened products by children and youngsters. Moreover, the

absence of an adequate oral hygiene associated to smoking, inadequate eating habits and the absence of checkups in the dental office are factors that may have short and long-term negative effects on oral health. The decrease of morbidity by oral disorders among the young people, which is an important premise of a good health state of the population, must start at this age through their becoming aware of the existing problems and the reduction of the risk factor action [3].

That is why the **aim of this paper** is to assess the risk factors for the oral health in the groups of students coming from two universities of Iasi,

in order to assess their behavior and knowledge in terms of the determining aspects of health state in tight correlation with the profile of the university.

MATERIAL AND METHOD

The cross-sectional study was carried out in 2016 by means of our own questionnaire made up of 12 questions divided into two sections, which was distributed and filled in by 110 students coming from two different universities of Iași: 59 (53.6%) from “Grigore T. Popa” University of Medicine and Pharmacy - UMF and 51 (46.4%) from “Al. I. Cuza”-University - UAIC. Most students, namely 87 (79.1%) were aged between 19 and 21 and 23 of them (20.9%) were aged more than 22. According to the distribution by genders, 70 (63.1%) were females and 40 (36.4%) males.

The data obtained were analyzed with the *Statistical Package for Social Sciences* (SPSS Inc., Chicago, USA, version 14.0 for Windows) software by using the Chi-square test for a threshold lower than 0.05.

RESULTS

SECTION 1- Eating habits and oral hygiene

The answers to the 7 questions of section 1 of the questionnaire are presented comparatively in table 1 for the students of the two universities. For question 1 referring to the type of favorite snack, we noticed significant differences ($p=0.002$) only in terms of the fruit consumption which was mentioned by more students from “Grigore T. Popa” UMF, 17.9%, as compared to 9.8% from “Al. I. Cuza” University. The consumption of cariogenic foods is almost equal, regardless of the university profile, 28.8% versus 29.5%. We could not identify differences for the frequency of eating hydrocarbons (question 2), a daily consumption being declared by

39% students of UMF, and 39.5% of UAIC. In exchange, the daily consumption of carbonated drinks (question no. 3) is higher for the university having a non-medical profile 7.8% as compared to 3.4% which is the percentage of students from the medical university, the differences having statistic significance, $p=0.014$.

As for the oral hygiene, most students, 76.5% from UMF, and 74.5% from UAIC, reported they brush their teeth twice a day; those who brush their teeth after each meal had the lowest percentage, only 3.9% for UAIC, and 13.3% for UMF. The type of toothpaste frequently used is the cosmetic one appreciated by 76.5% of UMF students and 78% of UAIC students; as for the means adjuvant to the tooth brushing the most used is the mouth wash used by 55.6% of the young people from the medical university and 43.5% from the non-medical university (question 6). The answers to question 7 show the frequency of using adjuvant means to the dental brushing: we noticed that most of the students from the medical university, 75.8%, resort to these methods 3 times a week unlike the students coming from “Al. I. Cuza” University whose percentage is lower, 57.9%, $p=0.024$.

Table 1- Distribution of items according to section 1

Questionnaire	University profile		Chi-square test (p)
	University „Grigore T. Popa“ (%)	University “Al.I.Cuza” (%)	
1. The type of favorite snack -cariogenic food -salted food -fruits -vegetables	28.8 15.3 17.9 37.7	29.5 21.7 9.8 39	0.002*
2. The frequency of cariogenic foods : -daily - maximum 3 times/ week -once a week	39 33.9 27.1	39.5 34.5 26	0.233
3. The frequency of carbonated drinks : - daily - maximum 3 times/week -once a week	3.4 45.8 50.8	7.8 44.9 47.3	0.014*
4. The frequency of brushing: -twice a day -once a day -after each meal	76.5 10.2 13.3	74.5 21.6 3.9	0.037*
5 The type of toothpaste: -cosmetic -medical	76.5 23.5	78 22	0.377
6. Adjuvant methods used in oral hygiene: - mouthwash -dental floss -others -anything	55.6 29.1 11.9 3.4	43.5 19.3 6.5 30.7	0.001*
7. The frequency of adjuvant methods : -daily - maximum 3 times/ week -once a week	10.4 75.8 13.8	7.1 57.9 35	0.024*

*Pearson chi-square, $p < 0.05$

SECTION 2- Other risk factors for oral health

This part of the questionnaire contains 5 questions referring to other risk factors for oral health, namely smoking, the alcohol consumption, the visits to the dental office and the reasons for coming for emergency issues. In table 2, we may see that the statistically significant differences ($p < 0.05$) between the two categories of students were obtained for the answers to question 8, where the percentage of non-smokers is higher for the UMF students, 83.1% as compared to UAIC students, 64.7%, as well as for the answers related to the number of cigarettes smoked a day-more

than 11 and where the percentage of UMF students is much lower, only 5.4%, as compared to the one of UAIC students, 24.5%. For questions 10, 11 and 12 we did not have any statistic significance ($p > 0.05$), the highest values being registered for the answers related to *alcohol consumption, the visits to the emergency dental office, and dental anxiety* as a motivation for the lack of the routine control.

Table 2 - Distribution of items according to section 2

Questionnaire	University profile		Chi-square test (p)
	University „Grigore T. Popa“ (%)	University “Al.I.Cuza”(%)	
8. Smoking status: -yes - no	16.9 83.1	35.3 64.7	0.035*
9. Nr. cigarettes smoked a day: -maximum 10 -more than 11	11.5 5.4	10.8 24.5	0.002*
10. Alcohol consumption -yes -no	49.4 51.6	60.8 46.2	0.122
11. Reasons for visiting dentist: - routine control - emergency -complications	13.6 72.5 13.9	11 74 15	0.248
12.The motivation for emergency visits: -dental anxiety - financial aspects -lack of free time	55.7 14.8 29.5	58.1 19.8 22.1	0.539

*Pearson chi-square, $p < 0.05$

DISCUSSIONS

As for the sugary product consumption, the statistical data at national data showed that there has been a behavioral change in the recent years in terms of the sweets consumption in the sense of the increase of consumption of these products among children and youngsters, to which we add the carbonated drinks. The *Cross-National Survey on Health Behaviour in School-aged Children-World Health Organization Collaborative Study (HBSC)* carried out in 43 countries, including Romania, showed that there are important variations between countries in terms of the cariogenic product consumption from 9% in Finland up to 70% in Poland [4]. According to our research, the consumption of sugar products reaches 28-30%, without having in terms of the university profile, the same trend being also noticed for the frequency of these products in nutrition. In exchange, the proportion of students from the medical

university is higher than the other students in terms of the fruit consumption, namely 17.9% versus 9.8%; another positive aspect is represented by the daily consumption of carbonated drinks, and this is quite low, only 3.4% coming from UMF, and 7.8% from UAIC. The mentioned results demonstrate the important role of information and education accumulated during the academic studies regarding the diminution of the risk factors for health. Besides these observations, the literature quotes researches showing that the social environment also contributes to the adoption of a certain lifestyle. For example, Papadaki et al. showed that students living far from their family adopt unhealthy eating habits that include a low consumption of fresh fruit and vegetables while the consumption of sugar and alcoholic drinks increases [5]. A good oral hygiene in terms of frequency, type of toothpaste and adjuvant methods is an important factor for the prevention of dental cavities and

gum disorders. Once acquired, this habit will not change any more, and the primordial role is played by family followed by school and university. Taking into account the information received by the students from the medical university in terms of oral hygiene, the situation is much more favorable for this category of young people, mainly in terms of tooth brushing frequency and the use of adjuvant methods. Thus, we noticed that 30.7% of students from "Al. I. Cuza" University never use these additional methods and among these only mouthwash is most known and used by 43.5% of them. In a survey carried out in 35 countries regarding the teenagers' behavior towards oral hygiene, Zaborskis et al. identified big differences between countries as follows: in Switzerland, Sweden and Norway 74% of male teenagers and 84% of female teenagers brush their teeth twice a day, whereas the teenagers from Malta, Lithuania and Finland situate at the opposite and where prevalence is 32% of boys and 52% of girls [6]. In this research, the frequency of tooth brushing twice a day has quite close values for both categories of young people, namely 76.5% from those from UMF, and 74.5% from UAIC.

Alcohol consumption and smoking represent risk factors incriminated for the onset of more than 200 pathological states with effect on the oral cavity as well through the existence of the risk of aggravation of the periodontal disease and the appearance of cancer lesions on a long term, and the risk of implant failure or post-extraction complications on a short term. According to the data supplied by the World Health Organization, Europe is the continent having the highest prevalence of smokers and alcohol consumers, and Romania occupies the 5th place in terms of alcohol consumption after Belarus, the Republic of Moldova, Lithuania and Russia [7, 8].

From the viewpoint of smoking prevalence, the study published by the European Committee in 2015 indicates a prevalence of smoking among the Romanian population of 27% as compared to the EU average of 26% [9]. In a research performed in Romania in 2014 on teenagers and young people, Sandu et al. found out that more than 42% of them smoke, three quarters of them smoke every day and a quarter smoke only occasionally. Another conclusion of this study is that there is an increasing trend of the smoker rate once with the transition to the adult life. If 71% of the youngsters aged between 15 and 19 are nonsmokers, this percentage decreases to 50% for those aged between 20 and 24 and to 44% for the young people aged between 25 and 29 [10].

In this study we noticed statistically significant differences between the students from the two universities as there are more *nonsmokers* among those who study at UMF, 83.1% as compared to those who study at UAIC, 64.7%, a situation more favorable than the national statistics mentioned in the previous study.

As for alcohol consumption, the same research study shows a similar tendency among the group of young people aged between 15 and 19 and the group of those aged between 24 and 29, in the sense that the rate of those who drink alcohol every day doubles with age [10]. In this study, we noticed a high percentage of students who said that they drink alcohol, namely 49.4% for the students from UMF, and 60.8 % for the students from UAIC, which are values quite close to the value identified at national level, namely 56.8%.

For the question "*How frequently do you see a dentist?*", almost three quarters answered that they go to the dental office only for emergency treatments (UMF-72.5%, UAIC-74%). Taking into account the level of information of the students from the

medical university, we consider this percentage as too high in relation to the percentage related to the periodic visits, 13.6%. In most cases, the need to see a dentist is regarded as a stressful reason for patients and for this reason it is postponed until the last moment. The previous unpleasant experiences represent a very important factor for the frequency of the visit to the dental office. The idea that a dental treatment is accompanied by pain and discomfort is still present at this age, although dentistry has evolved a lot lately. Literature quotes numerous researches that evaluate the level of anxiety of the dental treatments for the students coming from different universities. In a study carried out on 850 students, Sghaireen et al. found that the highest values of anxiety to dental treatments belong to students coming from non-medical universities, a situation also identified by Storjord and Teodorsen in Norway [11, 12].

In this study, we could not find statistically significant differences between the two categories of students for the question related to the reason for going to the dental office in emergency, and dental anxiety is the most frequently incriminated factor, $p=0.539$.

CONCLUSIONS

In this study we found differences in terms of students' attitude and behavior towards the risk factors for oral health, differences that may not be totally correlated to the university profile. Although the students coming from "Grigore T. Popa" have more information regarding the risk of occurrence of the general and oral disorders, we did *not* identify behaviors favorable to health in terms of the following aspects: the consumption and frequency of cariogenic food, the consumption of alcohol and the presentation to the dental office for periodic checkups. However, as compared to the students coming from "Al. I. Cuza" University, the medical students had a favorable behavior for health through the high consumption of fruit and vegetables, the low consumption of carbonated drinks, the frequent use of additional methods to teeth brushing, as well as the high percentage of nonsmokers.

The results of this study show the need for the introduction of some additional educational programmes for health within the curriculum of the educational institutions with the goal to obtain correct information from the scientific viewpoint, but mostly to create some healthy individual conducts that are built simultaneously with the educational development.

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