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**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1439275>Available online at: <http://www.iajps.com>**Research Article****PREVALENCE OF DENTAL CARIES AND GINGIVITIS  
AMONG 1<sup>ST</sup> AND 2<sup>ND</sup> YEAR DENTAL STUDENTS**<sup>1</sup>Razumova S.N., <sup>2</sup>Velichko E.V., <sup>3</sup>Tikhonova S.N., <sup>4</sup>Mohammed M., <sup>5</sup>Serebrov D.V., <sup>6</sup>Vasil'ev Y.L.,  
<sup>7</sup>Ivanova E.V.<sup>1</sup> Medical Institute of Peoples' Friendship University of Russia, Department of Propaedeutics of Dental Diseases.<sup>2</sup>Department of General Pathology and Pathological Physiology named after V.A. Frolov, Peoples' Friendship University of Russia<sup>3</sup>Medical Institute of Peoples' Friendship University of Russia, Department of Propaedeutics of Dental Diseases.<sup>4</sup>Medical Institute of Peoples' Friendship University of Russia, Department of Propaedeutics of Dental Diseases.<sup>5</sup>Medical Institute of Peoples' Friendship University of Russia, Department of Propaedeutics of Dental Diseases.<sup>6</sup>Medical Institute of Peoples' Friendship University of Russia, Department of Propaedeutics of Dental Diseases.<sup>7</sup>Russian Medical Academy of Postgraduate Education, therapeutic dentistry department, Moscow**Abstract:**

*Oral diseases, such as caries and gingivitis have a significant impact on human health and currently affect the majority of the world population, despite numerous attempts to reduce the prevalence of these diseases. One of the groups that is at risk of developing caries and gingivitis are the students.*

**Key words:** *caries, periodontitis, gingivitis, students, prevalence of caries and gingivitis, intensity of caries, hygiene index.*

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**INTRODUCTION:**

Diseases of the oral cavity, such as caries and gingivitis, are some of the most widespread diseases in the world and affect people's health as well as their quality of life [1].

Studies of caries prevalence in various countries have shown that more than half of school-age children and most adults are affected by caries [1].

The results of the National Epidemiological Dental Survey in the Russian Federation in 2007-2008 made in accordance with WHO criteria indicate the prevalence of dental caries among the population of all age groups in the Russian Federation remains high [2]. In the past 10 years there have been positive developments in the field of prevention of dental diseases and data shows a gradual decrease in the incidence of caries and gingivitis in all age groups worldwide [3,4,5]. Although a tendency for improvement has been registered the issue of oral health is still pressing and one of the groups at risk of caries development are students. The aim of this study was to evaluate the prevalence of caries among 1<sup>st</sup> and 2<sup>nd</sup> year dental students of the medical institute of People's Friendship University of Russia.

**METHODS:**

A total of 70 first and second year dental students in the age range from 18 to 23 years participated in the study on a voluntary basis - 43 female and 27 male. Prior to the initiation of the study, all participants

were informed about its purpose and procedure of conduct. For a complete assessment of the participants a questionnaire (detailed anamnesis) as well as the examination of the oral cavity including extraoral examination of the maxillofacial region, and intraoral examination assessing the condition of the soft and hard tissues of the oral cavity were conducted. Based on the obtained data the prevalence of caries (DMFT index) was calculated and, the need for treatment was determined [1]. Third molars of the upper and lower jaws were included in the calculation of the DMFT index. During the examination, the students were divided into two groups: one with a healthy periodontium and one with gingivitis. The distribution of students into these two groups were aided by dyeing their gums using "Color-Test No. 1" for indication of inflammatory processes in the soft tissue of the oral cavity. Furthermore, each group was divided into subgroups based on gender.

**RESULTS:**

In the group with a healthy periodontium the participants were from 19 to 23 years old. The average age was 20 years (SD  $\pm$  1.08). In the group with gingivitis, the age of participants ranged from 18 to 23 years with an average age of 20.42 years (SD  $\pm$  1.5). The group with a healthy periodontium was composed of 26 female and 13 male and the group with gingivitis of 17 female and 14 male. The data is presented in Table 1.

Table 1. Distribution of participants in groups according to the condition of their periodontium, age and gender.

	Healthy periodontium		Gingivitis	
	W	M	W	M
Total number of students	39		31	
Number of students divided by gender	26	13	17	14
Age of participants	19 – 23 years		18 – 23 years	

The results of the calculated DMFT index showed the prevalence of caries among all 1<sup>st</sup> and 2<sup>nd</sup> year students to be 92.86% and the collected data is presented in Table 2.

Table 2. Distributions of DMFT, DMFT% and the individual units "D", "M" and "F" based on the condition of the periodontium and gender.

DMFT	D		F		M		DMFT	DMFT %
	N <sub>0</sub> /%	M±SD	N <sub>0</sub> /%	M±SD	N <sub>0</sub> /%	M±SD	M±SD	M±SD
All participants	95/ 100	1,36 (± 1,93)	261/ 100	3,73 (± 3,07)	14/ 100	0,2 (± 0,60)	5,27 (± 3,82)	16,88 (± 11,96)
Female - all participants	41/ 43,16	0,95 (± 1,50)	186/ 71,26	4,33 (± 3,26)	9/ 64,29	0,2 (± 0,67)	5,47 (± 3,86)	17,73 (± 12,06)
Male - all participants	54/ 56,84	2 (± 2,37)	75/ 28,74	2,78 (± 2,52)	5/ 35,71	0,19 (± 0,48)	4,96 (± 3,81)	15,51 (± 11,90)
All with healthy marginal periodontium	44/ 46,32	1,13 (± 1,51)	158/ 60,54	4,05 (± 3,11)	9/ 64,29	0,23 (± 0,74)	5,41 (± 3,73)	17,63 (± 11,66)
Female with healthy marginal periodontium	17/ 17,89	0,65 (± 0,85)	111/ 42,53	4,27 (± 3,13)	6/ 42,86	0,23 (± 0,82)	5,15 (± 3,46)	17,19 (± 10,87)
Male with healthy marginal periodontium	27/ 28,42	2,08 (± 2,06)	47/ 18,01	3,62 (± 3,18)	3/ 21,43	0,23 (± 0,60)	5,92 (± 4,33)	18,51 (± 13,53)
All with gingivitis	51/ 53,68	1,65 (± 2,4)	103/ 39,46	3,32 (± 3)	5/ 35,71	0,16 (± 0,37)	5,10 (± 3,99)	15,93 (± 12,46)
Female with gingivitis	24/ 25,26	1,14 (± 2,09)	75/ 28,73	4,41 (± 3,54)	3/ 21,42	0,18 (± 0,39)	5,94 (± 4,48)	18,57 (± 14,00)
Male with gingivitis	27/ 28,42	1,93 (± 2,70)	28/ 10,73	2 (± 1,41)	2/ 14,29	0,14 (± 0,36)	4,07 (± 3,15)	12,73 (± 9,84)

The analysis of the data revealed an average group DMFT of 5.27 (SD ± 3.82). Among all female participants - group division disregarded, the prevalence of caries was higher than that among all male participants. Regarding the groups divided according to the condition of the periodontium, a higher DMFT value was found among the participants having a healthy periodontium than the

group with gingivitis - 5.41 and 5.10, respectively. The prevalence of decayed teeth (unit D) in the group with a healthy periodontium was 46.32%, the prevalence of filled teeth (unit F) was 60.54% and for missing teeth (unit M) the prevalence was 64.29%. In the group presenting with gingivitis the values for the corresponding units D, F and M were 53.68%, 39.46% and 35.71% respectively. Thus, the

prevalence of decayed teeth in the group with gingivitis was higher, and the number of filled and missing teeth was lower. The female registered with fewer decayed teeth, regardless of the condition of their periodontium, but with a higher number of filled and missing teeth compared to the young men.

Disregarding the group division most fillings were registered on molars and premolars. Among the molars the first molars of the lower jaw on the left hand side (tooth 3.6) were most often filled followed by the right hand side molars (tooth 4.6), then the first molars of the upper jaw left and right hand side (tooth 1.6 and tooth 2.6), followed by the second molars of the upper jaw on the right hand side (tooth 1.7). The group of teeth least affected were the frontal group (all incisors and canines).

Most often teeth were missing in the lower jaw 64% (9 teeth). Among these the first molar of the mandible on the right hand side were most often removed (tooth 4.6, total 3 teeth).

#### DISCUSSION:

This study was conducted among first and second years dental students of the medical institute of People's Friendship University of Russia (RUDN University). It revealed a prevalence of caries among all students of 92.86%. The average group value of the DMFT index was 5.27. In the "Federal State Program of Primary Prevention of Dental Diseases among the Russian Population" (2011) it is indicated that the values of DMFT for 15-year-olds are at the level of 3.81 [2]. The value of the DMFT index for 20-year-olds was calculated to be 5.96, which corresponds to the DMFT% of 18.63. The participants of this study, regardless of the condition of their periodontium, had a DMFT index lower than that of the majority of the population in the Russian Federation of this age group. The difference had no statistical significance. Thus, the groups of participants in the current study were considered representative of the population of the Russian Federation.

Similar studies have been conducted in many countries of the world. In the works of Bou C. *et al.* (France) [6], Cortes F.J. *et al.* (Spain) [4], Mamai-Homata E. *et al.* (Greece) [7], Peltola J.S. *et al.* (Finland) [5], as well as Maatouk F. *et al.* (Tunisia) [8], Kumar S. *et al.* [9] and Jain M. *et al.* (India) [10], the prevalence of caries is lower than that of the students participating in our study. However, in the studies of Šimat S. *et al.* (Croatia) [11], Dimitrova AG and others (Ukraine) [2], Dabrowska E. *et al.* (Poland) [12], Stojanović N. *et al.* (Bosnia and

Herzegovina, Belgium) [13], Brusokaite J. *et al.* (Latvia) [14], Kulak-Ozkan Y. *et al.* (Turkey) [15] and Hugo F.N. *et al.* (Brazil) [3] the level of DMFT was higher than that of the students surveyed in our study.

A higher level of DMFT was observed among female presenting with gingivitis. Similar data are presented in the study of Jain M. *et al.* and Dobrowska E. *et al.* [10,12], where the prevalence of caries among female was higher than that of young men.

In the studies of Šimat S. *et al.* there was a higher prevalence of caries in young men. This coincides with the data obtained in our study in the group with a healthy periodontium [12]. The girls participating in our study had fewer decayed teeth than the young men, but a higher number of filled teeth, which leads to the higher value of the DMFT index registered in the whole group and in the group with gingivitis. These data are supported by the studies of Kumar S. *et al.*, Mamai-Homata E. *et al.* and Kulak-Ozkan Y. *et al.* [7,9,15].

A number of studies explain the predisposition to caries of the female population by such factors as earlier teeth eruption, quality and quantity of saliva, and hormonal balance [7]. However, since dental caries is a multifactorial disease, it is not possible to draw an unambiguous conclusion about its predisposition among the females [1,7, 12].

#### CONCLUSION:

The results of this study showed the prevalence of caries among 1<sup>st</sup> and 2<sup>nd</sup> year dental students in Peoples' Friendship University of Russia (RUDN University) was 92.86%. The level of the calculated DMFT index turned out to be representative for the corresponding age group of the population of the Russian Federation. A gender-based analysis of the DMFT index showed a higher need for caries treatment in young men compared to the female.

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