GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 4 (349) Апрель 2024

ТБИЛИСИ - NEW YORK

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
No 3 (348) 2024

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GEORGIAN MEDICAL NEWS
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DENTAL CARIES AWARENESS AND RISK ASSESSMENT IN INTERNATIONAL STUDENTS OF GEORGIAN UNIVERSITIES

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Abstract.

Dental caries development in students depends on many factors.

Aim: Our research aims at studying the dependence of the incidence of caries among foreigners residing in Georgia on caries awareness and behaviors

Methods: Oral health status of the study population was assessed using the caries intensity DMFT index offered by the World Health Organization (WHO).

Patients were divided into two groups, according to the DMFT Index, with the first group comprising patients with low and very low DMFT index, and the second group – with moderate and high (<2,6) (>2,7) DMFT index.

Results: As one can see, the low-intensity caries group shows a reliably higher rate of correct answers. Caries predators in foreign students living in Georgia are Stress associated with examinations - OR=2.97(95% CI:1.49-5.90); Taking analgesics - OR=3.60(95% CI:1.02-12.67); Gastrointestinal diseases - OR=4.73(95% CI:1.94-11.50); Bruxism - OR=21.91(95% I:7.71-62.24); Tooth sensitivity -OR=3.77(95% CI: 1.83-7.75).

Conclusion:

• Knowledge of caries risk factors is low among international students with high intensity caries

• Stress related to exams increases the risk of dental caries among students, the following also increases the probability of dental caries: gastrointestinal diseases; Bruxism, taking analgesics and tooth sensitivity.

Key words. Dental caries, risk factors, stress, foreign students.

Introduction.

Dental caries is the most prevalent chronic oral infectious disease, characterized by damage of hard dental tissues [1].

Low rate of tooth brushing and dental attendance among university students in various cultures across Africa, Asia and America is associated with various factors, such as socio-economic status, lack of knowledge about the importance of tooth brushing and general health risk behaviors [2].

In addition, academic and examination stresses are the significant factors influencing university students [3], which affects the composition of saliva and, accordingly, the health of the oral cavity [4].

The knowledge of oral health characteristics is of particular importance.

According to the studies conducted in Japan, oral health status of international students has proved to be worse as compared to that of the local students [5,6].

The studies conducted in India revealed that dental students show high level of awareness of the nutritional risk factors associated with dental caries [7]. According to some other information, non-dental program students' general awareness of the etiology and prevention of common oral diseases is inadequate.

Our research aims at studying the dependence of the incidence of caries among foreigners residing in Georgia on caries awareness and behaviors.

Methods.

Oral health status of the study population was assessed using the caries intensity DMFT index offered by the World Health Organization (WHO), which implies the sum of the number of decayed, missing and filled teeth per person. It is calculated by the following formula D+M+F=DMF. WHO provides five index levels: very low intensity (0-1,1), low (1,2-2,6), moderate (2,7-4,4), high (4,5-6,5), very high (6,6 and more) [8].

Dental caries awareness was determined according to [9].

Patients were divided into two groups, according to the DMFT Index, with the first group comprising patients with low and very low DMFT index, and the second group – with moderate and high (<2,6) (>2,7) DMFT index.

Statistical analysis: for qualitative indices the absolute value and percentage were calculated.

The variances between groups were determined by Fisher's exact F-test, The difference was considered significant when $p<0.05$.

We evaluated the risk by means of multiple binary logistic regression analysis.

Data were processed using the SPSS Statistics 23 software.

Results.

The study showed that the intensity of dental caries depends on caries awareness (Table 1).

In the low-intensity caries group, there is a reliably higher prevalence of those, who believe that the disease indicators are the factors pointing to a high caries risk, occlusive carious lesions can be reduced by brushing, the recommended tooth brushing time is 2 minutes, a side effect of chlorhexidine is a change in

Table 1. *Distribution of caries awareness characteristics among international students.*

Awareness characteristics	Low intensity caries (N=244)		Moderate and high caries intensity (N=76)		F	P
	n	%	n	%		
Disease indicators are the factors pointing to the high risk of caries	200	81.97	52	68.42	6.44	0.0116
Proximal carious lesions can be reduced by flossing	96	39.34	68	89.47	70.82	<0.0001
Occlusal caries lesions can be reduced by brushing	212	86.89	48	63.16	22.81	<0.0001
Recommended time for tooth brushing – 2 minutes	212	86.89	52	68.42	14.21	0.0002
Chlorhexidine oral rinse is indicated for at least high caries-risk patients	188	77.05	60	78.95	0.12	0.7303
Side effect of Chlorhexidine is change in taste	100	40.98	44	57.89	6.80	0.0096
Sucrose is the most cariogenic disaccharide	208	85.25	56	73.68	5.42	0.0205
Lactose is the least cariogenic disaccharide	100	40.98	40	52.63	3.21	0.0743
Xylitol is the only sweetener with anti-cariogenic potential	188	77.05	48	63.16	5.85	0.0162
Simple sugar is less cariogenic than starch	172	70.49	48	63.16	1.45	0.2297
Frequency is the most important parameter in terms of sugar consumption	196	80.33	32	42.11	47.16	<0.0001
Cheese is among the food recommended to end the meal with	160	65.57	24	31.58	29.78	<0.0001
Human breast milk is less cariogenic than bovine milk	172	70.49	60	78.95	2.08	0.1504
Toxicity is the key disadvantage of fluoride	188	77.05	48	63.16	5.85	0.0162
Dehydration is one of the reasons for reduction of salivary flow	212	86.89	56	73.68	7.55	0.0063
Caries can be a transmissible disease	72	29.51	24	31.58	0.12	0.7318
Dental caries developed over the past 1 year – increased cases	192	78.69	64	84.21	1.10	0.2948
Last 3 years dental restorations placed in the oral cavity as a result of caries –reduced cases	180	73.77	56	73.68	0.00	0.9881
White spots are the early clinical signs of caries	212	86.89	44	57.89	33.43	<0.0001
Lesions approximating enamel visible on dental radiographs are an indicator of caries disease	184	75.41	44	57.89	8.86	0.0031
Economic status is not in correlation with dental caries	56	22.95	40	52.63	26.14	<0.0001
Reduced salivary flow increases the risk of dental caries	208	85.25	60	78.95	1.69	0.1949
Those at high risk of dental caries shall reduce intake of sugar and starch-containing food.	180	73.77	48	63.16	3.20	0.0747
Chlorhexidine is a powerful agent against all caries pathogenic microorganisms	64	26.23	56	73.68	66.99	<0.0001

taste, sucrose is the most cariogenic disaccharide , xylitol is the only sweetener with anticariogenic potential, frequency is the most important parameter in terms of sugar consumption, cheese is among the foods recommended to end the meal with, toxicity is the key disadvantage of fluoride, dehydration is one of the causes of reduced salivary flow, white spots are an early sign of caries, lesions approximating enamel visible on dental radiographs are an indicator of caries disease.

As one can see, the low-intensity caries group shows reliably higher rate of correct answers.

Meanwhile, in the moderate and high caries intensity groups there is a reliably higher prevalence of those, who believe that proximal carious lesions can be reduced by flossing, which is not correct, equally as it is incorrect to say that Chlorhexidine is a powerful agent against all caries pathogenic microorganisms and that the economic status is not in correlation with dental caries.

It is obvious that there is a low level of caries awareness in the high caries intensity group.

At the next stage of the research, the potential risk factors according to caries intensity (Table 2).

In the low-intensity caries group, the female frequency is reliably lower.

Alcohol abuse and frequency of tobacco use were highlighted among the bad habits in the high caries intensity group.

In the second group, the most common somatic pathologies include nervous system diseases, renal pathology, gastrointestinal pathologies, gout, cardiovascular diseases, peripheral vascular diseases, hypovitaminosis.

Bruxism and mechanical trauma are among the high caries intensity risk factors. Orthognathic occlusion was significantly more in the first group, and deep and distal occlusion in the second group.

The majority of respondents have pointed to stress. Academic and examination stress are both reliably prevalent in the high caries intensity group, whereas the stress caused by other reasons is high in both groups.

Tooth sensitivity to cold and hot drinks and unpleasant smell when talking concerns significantly more students in the second group than in the first one (Table 3).

Among the behavioral risk factors the noteworthy are the dental care habits, with the reliably higher rate of tooth brushing after every meal and twice a day in the first group and once a day - in the second group. There is a reliably higher rate of tooth brushing for 2 minutes in the first group, and for 1 minute – in the second group.

There is a reliably higher rate of up-and-down tooth brushing in the first group and the circular motions with greater pressure - in the second group.

There is a significantly higher frequency of toothbrush change every four months in the second group, and every two months and once a month – in the first group.

Significantly higher frequency of medicine intake (daily and regularly), including analgesics, antibiotics, antihistamines, and oral contraceptives, has been reported in the second group.

The majority of patients from both groups (83.61% and 84.21%, respectively) reported on dental attendance.

Dietary habits are among the behavioral factors that are attached particular importance.

A reliably frequent consumption of predominantly carbohydrates and acidic foods, as well as fruit juices and synthetic liquids, was reported in the group with high caries intensity, whereas the first group reported on frequent consumption of mostly proteins and fats.

The second group showed a reliably higher rate of sweet food daily intake and a lower frequency of rare intake of sweet foods.

We determined caries risk factors by means of regression analysis (Table 5).

As can be seen from the table, the following factors increase the risk of caries in foreign students living in Georgia: Gastrointestinal diseases, Bruxism, Tooth sensitivity, Stress associated with examinations, Taking analgesics.

Discussion.

Behavioral factors are of particular importance for oral health. From this point, the important is the impact of the disease awareness on healthy behavior rules [10]. Our study revealed that the incidence of caries depends on disease awareness. In particular, there were significantly more incorrect responses on caries development and prevention in the group with high caries intensity.

Diet has a great influence on the organism's metabolic processes [11]. Dental caries related dietary behaviors were frequently reported in the Canada University campus [12].

The frequency of sweet food intake is also important [12], according to our research, high frequency of carbohydrate intake, in general, and a daily intake of sweet foods, including frequent use of fruit juices and synthetic beverages, were revealed in the groups with moderate and high caries intensity. Although fruit juices contain many wholesome nutrients, including vitamins,

Table 2. *Statistical assessment of caries risk factors.*

Risk factors		**Low- intensity caries (244)**		**Moderate and high caries intensity (76)**		**F**	**p**
		n	**%**	**n**	**%**		
Gender	Female	72	29.51	36	47.37	8.43	0.0039
Bad habits	Cigarette smoking	78	31.97	44	57.89	17.30	<0.0001
	Alcohol abuse	16	6.56	12	15.79	6.27	0.0128
Somatic Pathologies	Nervous system diseases	16	6.56	16	21.05	14.04	0.0002
	Anemia	28	11.48	12	15.79	0.98	0.3222
	Allergy	36	14.75	16	21.05	1.69	0.1949
	Renal pathology	4	1.64	12	15.79	26.28	<0.0001
	Gastrointestinal diseases	12	4.92	24	31.58	47.07	<0.0001
	Podagra (acute gout)	0	0.00	16	21.05	-	-
	Diabetes mellitus (DM)	8	3.28	4	5.26	0.63	0.4281
	Cardiovascular diseases	8	3.28	16	21.05	28.58	<0.0001
	Peripheral vascular diseases	4	1.64	12	15.79	26.28	<0.0001
	Hypovitaminosis	8	3.28	16	21.05	28.58	<0.0001
	Foci of focal infection	16	6.56	8	10.53	1.31	0.2527
Occlusion (bites)	Orthognathic	117	47.95	13	17.11	21.06	<0.0001
	Deep	24	9.84	15	19.74	3.94	0.0432
	Direct	22	9.02	9	11.84	0.26	0.5976
	Cross	31	12.70	11	14.47	0.04	0.8195
	Open	22	9.02	8	10.53	0.03	0.8413
	Mesial	13	5.33	9	11.84	2.89	0.0994
	Distal	15	6.15	11	14.47	4.27	0.0469
Trauma	Mechanical trauma	12	4.92	24	31.58	47.07	<0.0001
	Bruxism	8	3.28	20	26.32	43.52	<0.0001
Stress	Associated with academic performance	28	11.48	36	47.37	54.28	<0.0001
	Associated with examinations	84	34.43	52	68.42	29.78	<0.0001
	Other	126	51.63	36	47.37	0.269	0.6040
Unpleasant sensation in oral cavity	Have you experienced any tooth sensitivity when consuming cold or hot drinks?	104	42.62	48	63.16	10.05	0.0017
	Have you had an unpleasant smell (bed breath) when talking?	72	29.51	36	47.37	8.43	0.0039

Table 3. *Statistical assessment of behavioral factors by caries intensity in international students.*

Behavioral factors		**low-intensity caries (244)**		**High and moderate-intensity caries (76)**		**F**	**P**
		n	**%**	**N**	**%**		
Habits	Do you rinse your mouth with water after every meal?	168	68.85	48	63.16	0.85	0.3563
	Use of dental floss	76	31.15	28	36.84	0.85	0.3563
Tooth brushing frequency	After every meal	60	24.59	4	5.26	11.15	<0.0001
	Once	132	54.10	56	73.68	8.48	0.0038
	Twice	52	21.31	10	13.16	4.23	0.0190
	Before going out	0	0	6	7.89	-	-
Tooth brushing time	1 minute	28	11.48	26	34.21	19.76	<0.0001
	2 min.	132	54.10	30	39.47	4.39	0.0360
	>2 min.	84	34.42	20	26.31	1.328	0.209
Tooth brushing technique	Up and down	112	45.90	24	31.58	4.91	0.0274
	Left to right	60	24.59	12	15.79	2.58	0.1093
	Circular motions	72	29.51	40	52.63	14.14	0.0002
	With great pressure	4	1.64	12	15.79	26.28	<0.0001
Frequency of changing toothbrush	Once a year	24	9.84	8	10.53	0.03	0.8615
	Every four months	52	21.31	40	52.63	30.20	<0.0001
	Every two months	124	50.82	24	31.58	8.81	0.0032
	Every month	48	19.67	4	5.26	7.51	0.002
Frequency of taking medication	Daily	4	1.64	16	21.05	41.92	<0.0001
	Regularly	16	6.56	20	26.32	24.23	<0.0001
	Rarely	116	47.54	40	52.63	0.60	0.4398
which particular medicines are taken	Analgesics	8	3.28	12	15.79	16.17	0.0001
	Antibiotics	60	24.59	28	36.84	4.40	0.0368
	Antihistamines	12	4.92	12	15.79	10.12	0.0016
	Contraceptives	12	4.92	12	15.79	10.12	0.0016
A visit to the dentist	Have you visited a dentist?	204	83.61	64	84.21	0.02	0.9012

Table 4. *Assessment of nutritional factors by caries intensity in international students.*

Dietary behaviors	Predominantly carbohydrates	72	29.51	36	47.37	7.57	0.0063
	Predominantly fats and proteins	152	62.30	36	47.37	5.38	0.0210
	Keeping a special diet	20	8.20	4	5.56	0.32	0.6627
	Fast food	60	24.59	44	57.89	32.05	<0.0001
	Frequent consumption of acidic food	16	6.56	20	26.32	24.23	<0.0001
	Frequent fruit juice intake	56	22.95	36	47.37	17.69	<0.0001
	Synthetic liquid intake	20	8.20	28	36.84	41.95	<0.0001
Frequency of sweet food intake	Daily	40	16.39	24	31.58	8.52	0.0038
	Regularly	88	36.07	28	36.84	0.99	0.8920
	Rarely	92	37.70	14	18.42	8.87	0.0020
	Never	24	9.84	0	0	-	-

Table 5. *Caries risk assessment in foreign students at Georgian universities.*

Risk factors	**B**	**S.E.**	**Wald**	**p**	**OR**	**95% C.I. for OR**	
						Lower	**Upper**
Gastrointestinal diseases	1.55	0.45	11.73	0.0006	4.73	1.94	11.50
Bruxism	3.09	0.53	33.57	<0.0001	21.91	7.71	62.24
Tooth sensitivity	1.33	0.37	13.04	0.0003	3.77	1.83	7.75
Stress associated with examinations	1.09	0.35	9.65	0.0019	2.97	1.49	5.90
Taking analgesics	1.28	0.64	3.98	0.0460	3.60	1.02	12.67
Constant	-3.20	0.38	70.64	<0.0001	0.04	-	-

they are rich in sugars, and acidic fruit juices change pH level of saliva, thereby contributing to the development of caries [3,13,14].

Academic stress is a specific factor differentiating university students from non-student peers [3]. Stress factor has an influence on salivary oxidative activity and, consequently, on caries development [15-19]. According to our research, significantly more university students from high caries intensity group reported on both, academic and examination stress. According to the regression analysis, Stress associated with examinations is a caries risk factor for foreign students living in Georgia.

Concurrent diseases are related directly to the impact of pathology on dental hard tissue – e.g. gastrointestinal diseases, as a focus of infection and a pH change trigger [20], Gastrointestinal diseases, according to our research, are a risk factor for caries in foreign students.

As well as medications taken during some diseases, that represent caries risk factors [21]. Oral complications could be observed in patients on antihypertensive drugs [10], increased caries incidence is reported in patients on anti-asthmatic drugs [22]. Long-term use of oral contraceptives enhances the likelihood of dental caries [23]. Unjustifiable use of antibiotics and analgesics is a common practice during dental pathologies [24].

According to our research, a significantly more frequent use of medications, namely analgesics, antibiotics, antihistamines, oral contraceptives, was reported in the group with high caries intensity. The development of caries can be caused by taking drugs [25]. We believe that the administration of analgesics is a risk factor for caries, because according to the literature, low pH causes enamel erosion [26]. Acetyl salicylic acid taken regularly, can cause erosion, taking drugs can also change the secretion of saliva, which is also a prerequisite for damage to soft tissues of the tooth [27]. Analgesics have the potential to develop dental caries [28], In our study, the use of analgesics was identified as a caries risk factor.

Bruxism in students is related to stress and its prevalence reaches 30% [13,29]. According to our research, both bruxism and stress are predictors of caries. Chronic stress can also weaken the immune response (as measured by antibody responses to vaccines) and can cause or contribute to the development of various diseases such as cardiovascular, endocrine, gastrointestinal diseases and others [4,30]. According to our research, bruxism is a caries risk factor among foreign students living in Georgia.

It is necessary to develop an oral health promotion program that will help young adults improve their oral hygiene behavior to maintain good oral health.

Conclusion.

• Knowledge of risk factors is low among international students with high-intensity caries

• Stress related to exams increases the risk of caries in students and factors associated with it: Gastrointestinal diseases; bruxism; as well - Taking analgesics and Tooth sensitivity.

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Осведомленность и оценка риска кариеса среди иностранных студентов грузинских университетов

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Развитие кариеса у студентов зависит от многих факторов.

Наше исследование направлено на изучение зависимости заболеваемости кариесом среди иностранцев, проживающих в Грузии, от осведомленности о кариесе и поведения.

Методы: Состояние здоровья полости рта исследуемой популяции оценивалось с использованием индекса интенсивности кариеса DMFT, предложенного Всемирной организацией здравоохранения (ВОЗ).

Пациенты были разделены на две группы по индексу DMFT, причем в первую группу вошли пациенты с низким и очень низким индексом DMFT, а во вторую группу – с умеренным и высоким (<2,6)(>2,7) индексом DMFT.

Результаты: В группе низкой интенсивности кариеса достоверно выше процент правильных ответов. Предвестниками кариеса у иностранных студентов, проживающих в Грузии, являются: Стресс, связанный с экзаменами - OR=2,97(95% CI:1,49-5,90); Прием анальгетиков - OR=3,60(95%CI:1,02-12,67); Желудочно-кишечные заболевания - OR=4,73(95% CI:1,94-11,50); Бруксизм - OR=21,91(95%CI:7,71-62,24); Чувствительность зубов -OR=3,77 (95% CI: 1,83-7,75).

Заключение: Среди иностранных студентов с высокой интенсивностью кариеса, знания о факторах риска кариеса низкие.

Стресс, связанный с экзаменами, повышает риск возникновения кариеса у студентов, вероятность возникновения кариеса также повышают: заболевания желудочно-кишечного тракта; Бруксизм, прием анальгетиков и повышенная чувствительность зубов.

Ключевые слова: кариес зубов, факторы риска, стресс, иностранные студенты.