

# GEORGIAN MEDICAL NEWS

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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии  
საქართველოს სამედიცინო სიახლენი

## GEORGIAN MEDICAL NEWS

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**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 ВИНТИ 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 ВИНТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

### WEBSITE

[www.geomednews.com](http://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](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. Корректур авторам не высылаются, 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 computer-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.nlm.nih.gov/bsd/uniform_requirements.html)  
[http://www.icmje.org/urm\\_full.pdf](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 საქურაღებოლ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დაიცვათ 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 შედეგის 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 ფხიხლებში 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.

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## A RETROSPECTIVE STUDY OF THE MAXILLOFACIAL INJURIES IN TWO EMERGENCY DEPARTMENTS IN TBILISI, GEORGIA

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### Abstract.

**Introduction:** Maxillofacial injuries are a global problem in our modern society. It can be a major cause of increased morbidity and mortality. Maxillofacial trauma can lead to scar distortion accompanied by emotional and psychological problems. The epidemiology of facial fractures varies in terms of trauma type, the extent of injury, and severity.

**Aims:** The main aim of this research is to explore the scope, the burden, and the etiology of maxillofacial injuries in Tbilisi, Georgia.

**Methods:** Data was retrospectively collected from two large emergency departments in Tbilisi, Georgia using a cross-sectional design. Inclusion criteria was patients admitted in hospitals during one year with diagnosis maxillofacial injury. SPSS 21 software was used for statistical analysis. Differences in categorical variables were assessed with Chi-square tests of independence.

**Results:** This research shows that men are still the most frequent victims of maxillofacial injuries. Out of 598 patients, whose age ranged from 1 month to 87 years - 67% were males, and 33% patients were females, including both, maxillofacial trauma alone and also combined injuries. With only maxillofacial injuries, the male patients were still leading, with 51% (307) and female patients were 28% (167), these results gave us a statistically significant difference ( $p = 0.026$ ). The main causes of maxillofacial injuries were falls, which equaled to 63% (378 patients) from total recorded data, as in many other countries.

**Discussion/Conclusion:** The results of this research provide really important information about future preventive interventions in the country. It also shows us that educating the public with prevention strategies is substantial.

**Key words.** Epidemiology, Georgia, hospitalized patient, maxillofacial injury, retrospective study.

### Introduction.

Injuries of the body and face are very important public health issues, it was approved that one of the leading causes of death in the first 40 years of life are traumas [1]. Trauma can cause disability and as a result, patients can lose productivity. Research showed that cancer and heart disease combined, causing less loss of working years than traumas [2].

Maxillofacial fractures are the result of various types of injuries to the face and jaw and may occur separately as well as in combination with other traumas of the body [3].

Maxillofacial injuries are one of the most common traumas from general injuries [4,5], about one-third of all injured patients have a type of injury in the maxillofacial area [6]. They are among the most common causes of morbidity and mortality,

in developed and developing countries, which can also lead to temporary or permanent disability [7-9]. Maxillofacial injuries occur in approximately 5 to 33 percent of patients experiencing severe trauma [10,11].

Maxillofacial injuries play a really important role in a person's appearance. Facial trauma can lead to scarring, which is accompanied by psychological and emotional problems [12,13]. It also has many important functions, such as eating, breathing, smelling, hearing, and speaking [14]. Post-traumatic stress disorder, depression, and stress syndrome are usually associated with maxillofacial traumas.

The management of maxillofacial trauma includes treatment of facial bone fractures, dentoalveolar trauma, and soft tissue injuries, as well as any injuries, mainly associated with the head and neck [15]. Diagnosis and treatment of facial fractures remain a challenging problem that regularly requires a multidisciplinary approach [16,17]. Therefore, because of their importance and frequency, they need a correct diagnosis and specific treatment [4,18].

Special attention should be paid to mechanisms and etiological factors of trauma [19-21]. Maxillofacial injuries are a consequence of road traffic injuries, falls, various sports activities, interpersonal violence, and workplace injuries [22]. This problem affects every age group of the entire population.

The etiology of Maxillofacial damage varies between countries and within [23]. The epidemiology of maxillofacial fractures is extremely changeable, depending on various factors such as the geographical area, cultural and lifestyle differences, and socioeconomic trends [24,25].

There are many cases of maxillofacial injuries in Georgia, [26] but still, there is a lack of research on this topic.

The objective of the present study was to assess the causes of maxillofacial injuries placed in the two of the highest volume emergency hospitals, one serving children and one adults, in the capital city of Georgia, considering demographic, seasonal, and clinical variables, and provide evidence for future treatment and prevention actions.

### Materials and methods.

The present retrospective study was conducted in Tbilisi, Georgia, including one pediatric hospital, Children's new clinic and the High Technology Medical Centre, University Clinic (which includes both, children, and adults). These clinics were chosen because they have the highest volume of trauma referrals in the country.

This study is a retrospective case series using medical records. All patients in both hospitals who were admitted for a maxillofacial injury between January 1 and December 31,



2018, were included. Maxillofacial injuries were identified by a manual search of medical records, by defining the diagnosis with ICD codes. The lesions were isolated or combined with other parts of body injuries.

The National Center for Disease Control and Public Health Institutional Review Board has approved protocol for the Protection of Human Subjects. (IRB # 2017-062) (IRB # 2018-050).

The questionnaire used for our research was developed within the framework of the project iCREATE - Increasing Capacity in Research in Eastern Europe, funded by the United States National Institutes of Health. The questionnaire was translated and used in Georgia, as well as in other participating countries: Romania, Armenia, and Moldova. Data was collected by manual review of the medical records.

The patients were identified using the hospital database. There was the possibility to find out most details for the research, from the database. The questionnaire information explains the demographics, causes and characteristics of maxillofacial injuries. The research data includes age, sex, date of referral, mode of injury, type of trauma, number of injuries, the severity of injuries, and etiology. Data were collected directly from the medical records of the hospitals, all the medical records of these patients (children and adults) were reviewed and analysed retrospectively.

Data were tabularized and analysed using the Statistical Package for the Social Sciences (SPSS 21). Based on these data, a descriptive analysis was made, presenting the absolute and relative frequencies of the variables under consideration.

## Results.

During the year 2018, starting from January 1st till December 31st, 598 patients with maxillofacial injuries were treated in two of the largest emergency departments in Tbilisi. Out of those patients, 67% (n=401) were males, and 33% (n=197) patients were females. It includes both children and adults. The age of these patients was divided into 4 age groups: >18; 18-34; 34-61 and 61<. The age of patients ranged from 1 month to 87 years. The average age was 16.4 and the median age was 10, which is reflective more of our sample of one children's and one University hospital than the population distribution of maxillofacial injuries. The modal age group was 0-18 accounting for 408 (68%) patients, followed by 18-34 years accounting for 92 (15%) patients. The percentage of patients between 34 and 61, summed up to 13% or 79 patients, while the remaining 3% or 18 patients were older than 61.

Furthermore, most of the patients under 18, were males with only one maxillofacial injury 35% (207 patients), while the rest were females 20% (122). (Table 1) The number of male patients between the age of 18 and 34, was 9% (56) and the number of female patients from the same age group, was 3% (20). The number of male patients between 34 and 61, was 6% (37) and while the number of females was 4% (21). As for the last age group of 61 and above, it included 1% (4) males and 1% (4) females.

Besides the patients with one injury, in the same age groups, we got the information about the multiple injuries. The number of male patients in all age groups was 16% (97 patients) and

**Table 1.** Patient type by sex and age.

Patient type by sex and age	Male		Female		Total
	Maxillofacial injury	Multiple injury	Maxillofacial injury	Multiple injury	
>18	207	60	122	19	408
18-34	56	16	20	1	93
34-61	37	17	21	4	79
61<	4	4	4	6	18
Total	304	97	167	30	598

**Table 2.** Injury to a part of the body by sex and age.

Injury to a part of the body by sex and age		Age				
		>18	18-34	34-61	61<	Total
Male	Head / Skull / Forehead	51	9	6	1	67
	Face (except eye)	208	62	45	7	322
	Eye	6	1	2	0	9
	Neck	1	0	1	0	2
	Shoulder bone	0	0	0	0	0
	Other	0	0	0	0	0
	Not specified	1	0	0	0	1
Female	Head / Skull / Forehead	24	7	6	2	39
	Face (except eye)	115	13	18	7	153
	Eye	2	1	0	0	3
	Neck	0	0	0	0	0
	Shoulder bone	0	0	0	1	1
	Other	0	0	1	0	1
	Not specified	0	0	0	0	0
Total	408	93	79	18	598	

only 5% (30 patients) were female patients. Multiple injuries in male patients were more common in all age groups, except for the oldest group 61 and above, where the number of female patients (1%, 6 patients) was higher than the number of male patients (1%, 4 patients). The distribution of gender and age was similar for patients with only a maxillofacial injury and for those who also had other injuries, although single injuries were more common. From the given results, it appeared that there was a statistically significant difference ( $p = 0.026$ ).

Face (except eye) was the most common anatomical site in both male and female patients, (Table 2) in all age groups of examined people appeared that: Males under age 18 equaled to 35% (208 patients) when female in the same age group was 19% (115 patients); The number of males, between age 18-34 was 10% (62 patients) and females between age 18-35 were 2% (13 patients); As for age group between age 34-61, males were equal to 8% (45 patient) and female to 3% (18 patients); And in the last age group which was 61 and above, the results was 1% (7 patients) for each, male and female patients.

With the highest rate of numbers, the injury of the face was followed by the head/skull/forehead injuries. Where it was

evident that most patients with head/skull/forehead injuries appeared in the youngest age group, 18 and under with 9% (51 patients).

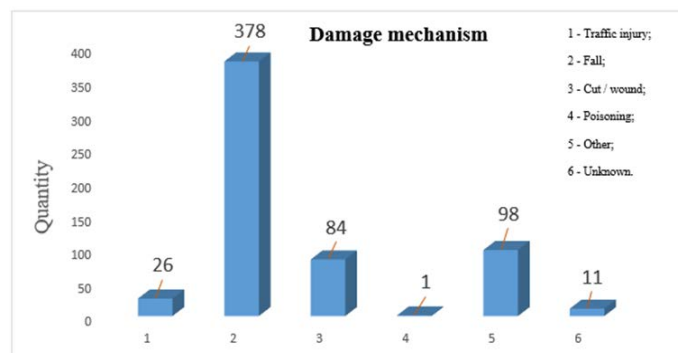
Our study showed that the most frequent cause of injury was fall, which equaled to 63% (378 patients) from total recorded data, while cut/wound equaled to 14% (84 patients), traffic injuries equaled to 4% (26 patients), and other damage mechanisms equaled to 16% (98 patients). Also, according to the research, poisoning was only 0,2% (1 patient) while unknown causes (which was uncertain) equaled to only 2% (11 patients) (Figure 1).

Most of the injuries 92% (552 patients), were unintentional, followed by assaults - 3% (19 patients); intentional self-harms - 0.8% (5 patients), and unidentified intents – 0.8% (5 patients). Only 1 patient (0,2%) experienced other violence, while 16 patients (1%) suffered from other established intentions and unspecified intentions, 8 patients per each accident (Figure 2).

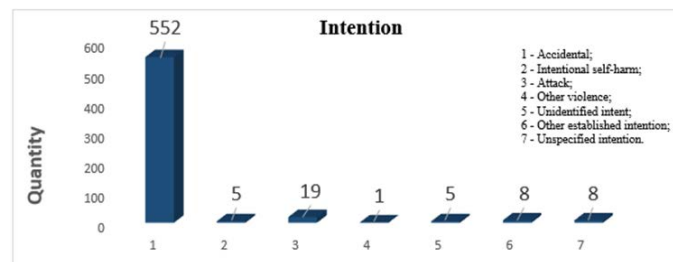
One of the most important information was about the mechanism of injury by month and age, there was a statistically significant difference ( $p = 0.001$ ). It turned out, that the youngest age group, 18 and under, was suffering the most from the listed injuries, during all months, which was equal to 68% (408 patients). There was also a significant difference in the mechanism of injury "Fall" by age and months ( $p = 0.001$ ). The total number of "Fall" injuries was 378 patients (63%). From where the most patients were, manifested in the first age group, 18 and under, which equaled to 45% (267). The highest number of fall cases was identified in October, which amounted to 6% (36 patients). Followed by April 5,5% (34 patients) and by May with 5% (32 patients). The next month with an outlined number was June 5% (30 patients). Also, an interesting result was shown in November and in December, which was 4,5% (27), per month. The highest frequency of all injury mechanisms was detected in May 12% (69 patients), followed by December 11% (64 patients) and by October 11% (64 patients) (Table 3 and Table 4).

## Discussion.

This is the first retrospective study, which was conducted in Tbilisi, Georgia, about the epidemiology of maxillofacial injuries. There is still no detailed information about this topic, which is very important for future prevention events and proper treatment planning.



**Figure 1.** According to the research, poisoning was only 0,2% (1 patient) while unknown causes (which was uncertain) equaled to only 2% (11 patients).



**Figure 2.** Only 1 patient (0,2%) experienced other violence, while 16 patients (1%) suffered from other established intentions and unspecified intentions, 8 patients per each accident.

The cause, incidence, etiology, clinical presentation, and characteristics of facial injuries depend on some contributory factors, such as sociodemographic, economic, cultural environmental, cultural and socioeconomic factors [27].

This retrospective study shows the epidemiology of maxillofacial injuries studied on the example of two large emergency hospitals. The male-female ratio was 2:1. As with almost all studies, it has been revealed here that, men are more often injured by the trauma, than women [28,29]. The result may be caused by the fact, that men are more exposed to risk factors, making them weaker to accidents. Men are more likely to commit physical violence, are more active in contact sports, in drinking alcohol, and have more irregularities driving the car [14,30-32].

The majority of cases were within the age range of 18 years and under (68% - 408), followed by 18-34 (15% - 92) and 34-61 (13% - 79). This shows us almost the same result, as in other countries [33]. People are more active, at a young age and that's why they are more often the victims of maxillofacial injuries. Maxillofacial injuries affect 1 out of every 3 individuals annually, especially with children [34-36].

Georgia has similar results as other low, middle, and high-income countries related to the mechanism of maxillofacial injuries [37-39]. From our research, it was revealed that falls were generally the leading driver of high incidence rates of maxillofacial traumas for both sexes, which was equal to 63% (378 patients).

We also determined the most common injury sites. Our findings showed that nasal injuries were the most involved trauma 24% (141), followed by an open wound of lip and oral cavity 21% (123), on the third place were eye injuries 16% (94), and traumas of mandibles were only in the fourth place by frequency 8% (49). These results are slightly different from other countries' data. For example: In the first place by the frequency of most common injury site, was mandible bone in the Northeast of Iran [40]. One more example is Nigeria, where most of the fractures of maxillofacial skeleton patients were of the mandible [41]. Besides these countries, the research which was conducted at several European departments of oral and maxillofacial surgery over one year also showed a slight difference compared to Tbilisi, Georgia, where the most frequently observed fractures involved the mandible, the second was OZM (Orbital zygomatic-maxillary) fractures, followed by orbital fractures and nose fractures [27]. As anticipated, the mandible jaw is mobile and has less bony support than the maxilla and other parts of the face. Nevertheless, mandible injuries are only in

**Table 3.** Mechanism of injury by month and age.

Mechanism of injury by months and age	Age	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Road traffic damage	>18			3	1	1	3		2	4		1	1	16
	18-34	1			2			1	1			1		6
	34-61	1		1	1								1	4
	61 +													0
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>26</b>
Fall	>18	6	2	12	34	32	30	21	16	24	36	27	27	267
	18-34	7	3	1	4	5	4	5	4	5	3	4	8	53
	34-61	7	3	1	1	3	7	3	1	4	1	8	8	47
	61 +		1	4		2	1	1				2	1	12
	<b>Total</b>	<b>20</b>	<b>9</b>	<b>18</b>	<b>39</b>	<b>42</b>	<b>42</b>	<b>30</b>	<b>21</b>	<b>33</b>	<b>40</b>	<b>41</b>	<b>44</b>	<b>379</b>
Cut/wound	>18	4	1	4	9	9	3	7	10	1	2	2	4	56
	18-34				1	6	2	2	1	1				13
	34-61				1	2	2	3		2		1	1	12
	61 +						1	1				1		3
	<b>Total</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>11</b>	<b>17</b>	<b>8</b>	<b>13</b>	<b>11</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>84</b>
Other	>18	2		6	4	7	4	1	2	8	20	6	8	68
	18-34	2	1				2			2	1	3	3	14
	34-61	1	3	1		1	1		1	2		4		14
	61 +						1				1	1		3
	<b>Total</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>4</b>	<b>8</b>	<b>8</b>	<b>1</b>	<b>3</b>	<b>12</b>	<b>22</b>	<b>14</b>	<b>11</b>	<b>99</b>
Unknown	>18				1									1
	18-34				1	1		1	1			1	2	7
	34-61	1					1			1				3
	61 +													0
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>

**Table 4.** Mechanism of injury by month and age.

Mechanism of injury by months and age	Age	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total	>18	12	3	25	49	49	40	29	30	37	58	36	40	408
	18-34	10	4	1	8	12	8	9	7	8	4	9	13	93
	34-61	10	5	3	3	6	11	6	2	9	1	13	10	79
	61 +	0	1	4	0	2	3	2	0	0	1	4	1	18
	<b>Total</b>	<b>32</b>	<b>13</b>	<b>33</b>	<b>60</b>	<b>69</b>	<b>62</b>	<b>46</b>	<b>39</b>	<b>54</b>	<b>64</b>	<b>62</b>	<b>64</b>	<b>598</b>

fourth place in Georgia, which should be considered as one of the most distinctive features.

The research gives us the opportunity to understand detailed information about the characteristics of maxillofacial injuries and helps us to identify main epidemiological features for the patients with maxillofacial traumas in all age groups during one year (2018) in Tbilisi Georgia, based on which it can be possible to plan relevant preventive measures.

Face is the most vulnerable area of the body, that is why it is important to protect it from different trauma. Using safety equipment can reduce the risk and severity of maxillofacial injuries. In our study population falls was a leading cause of maxillofacial injuries. Appropriate falls prevention strategies should be elaborated and implemented in the country. Furthermore, raising awareness of injury prevention is pivotal. For all these reasons, we believe it is appropriate to conduct an educational event to prevent fall injuries.

### Limitations of the study.

The research was done about two emergency departments, where most patients with maxillofacial traumas were taken.

Furthermore, we cannot be absolutely sure that the results of our research will be generalized, like other retrospective research, this study may be subject to information prejudice. However, the results presented are connected with other studies and the analysis of these cases provides important data for the prevention events and for better management of such injuries.

### Conclusion.

Epidemiological studies of maxillofacial traumatic injuries are important not only for identifying the burden of trauma, but also for the effective management and planning of resources in the field of health care and for improving the quality of medical care in hospitals. Epidemiological studies of maxillofacial traumatic injuries are important means of preventing maxillofacial injuries.

This is the first retrospective study, conducted by using data from hospitalized patients, in Tbilisi, Georgia. Which shows important information for designing specific plans and prevention events for avoiding future maxillofacial injuries. Therefore, it gives us direction to raise the level of education of society.

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**Conflict of Interest.** None

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**Ретроспективное исследование челюстно-лицевой травмы в двух отделениях неотложной помощи г. Тбилиси (Грузия)**

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**ВВЕДЕНИЕ:** Челюстно-лицевые травмы являются глобальной проблемой современного общества. Это может быть основной причиной повышенной заболеваемости и смертности. Челюстно-лицевая травма может привести к деформации рубца, сопровождающейся эмоциональными и психологическими проблемами. Эпидемиология переломов лица зависит от типа травмы, степени повреждения и тяжести.

**ЦЕЛИ:** Основная цель этой статьи — изучить масштабы, тяжесть и этиологию челюстно-лицевых травм в Тбилиси, Грузия.

**МЕТОДЫ:** Данные были ретроспективно собраны в двух крупных отделениях неотложной помощи в Тбилиси, в Грузии, с использованием метода поперечного сечения. Критериями включения были пациенты, госпитализированные в стационар в течение одного года с диагнозом челюстно-лицевая травма. Для статистического анализа использовалось программное обеспечение SPSS 21. Различия в категориальных переменных оценивались с помощью критерия независимости Хи-квадрат.

**РЕЗУЛЬТАТЫ:** Это исследование показывает, что мужчины по-прежнему являются наиболее частыми жертвами челюстно-лицевых травм. Из 598 пострадавших, возраст которых колебался от 1 месяца до 87 лет, 67% мужчин и 33% женщин, в том числе как с ЧЛТ отдельно, так и с сочетанными повреждениями. При только челюстно-лицевых травмах по-прежнему лидировали пациенты мужского пола - 51% (307), а пациенты женского пола - 28% (167), эти результаты дали нам статистически значимую разницу ( $p=0,026$ ). Основными причинами травм челюстно-лицевой области были падения, что составило 63% (378 пострадавших) от общего количества зарегистрированных данных, как и во многих других странах.

**ОБСУЖДЕНИЕ/ЗАКЛЮЧЕНИЕ:** Результаты этого исследования предоставляют действительно важную информацию о будущих профилактических вмешательствах в стране. Это также показывает нам, что обучение населения стратегиям предотвращения является существенным.

**Ключевые слова:** эпидемиология, Грузия, госпитализированный больной, челюстно-лицевая травма, ретроспективное исследование.

ყბა-სახის ტრამვული დაზიანებების რეტროსპექტრული კვლევა თბილისის (საქართველოს) გადაუდებელი დახმარების ორ განყოფილებაში

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<sup>2</sup>ორთოპედის და იმპლანტოლოგიის დეპარტამენტი, მედიცინის ფაკულტეტი, ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტი; თბილისი, საქართველო.

<sup>3</sup>საზოგადოებრივი ჯანდაცვის დეპარტამენტი, მედიცინის ფაკულტეტი, ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტი; თბილისი, საქართველო.

<sup>4</sup>საზოგადოებრივი ჯანდაცვის დეპარტამენტი, პოლიტიკური, ადმინისტრაციული და კომუნიკაციის მეცნიერებათა კოლეჯი, ბაბეს-ბოლიაის უნივერსიტეტი, კლუჟ-ნაპოკა, რუმინეთი.

<sup>5</sup>კალიფორნიის უნივერსიტეტი, სან დიეგო, ლა ჯოლა კალიფორნია, ამერიკის შეერთებული შტატები

შესავალი: ყბა-სახის დაზიანებები გლობალური პრობლემაა ჩვენს თანამედროვე საზოგადოებაში. ყბა-სახის მიდამოში ტრავმული დაზიანებები შეიძლება იყოს ავადობისა და სიკვდილიანობის ძირითადი მიზეზი. ყბა-სახის ტრავმამ შეიძლება გამოიწვიოს ნაწიბუროვანი დამახინჯება, რომელსაც თან ახლავს ემოციური და ფსიქოლოგიური პრობლემები. სახის მოტეხილობების ეპიდემიოლოგია განსხვავდება ტრავმის ტიპის, დაზიანების და სიმძიმის მიხედვით.

მიზნები: კვლევის მთავარი მიზანია შევისწავლოთ ყბა-სახის დაზიანებების მასშტაბი, სიმძიმე და ეტიოლოგია თბილისში, საქართველოში.

მეთოდები: მონაცემები შეგროვდა რეტროსპექტულად, თბილისის მაღალი მიმართვიანობის, ორ

გადაუდებელ დახმარების განყოფილებაში, ჯვარედინი დიზაინის გამოყენებით, ერთი წლის განმავლობაში ჰოსპიტალიზირებული პაციენტები. ჩართვის კრიტერიუმი იყო: პაციენტები ყბა-სახის დაზიანების დიაგნოზით. სტატისტიკური ანალიზისთვის გამოყენებული იქნა SPSS 21 პროგრამული უზრუნველყოფა. კატეგორიულ ცვლადებში განსხვავებები შეფასდა დამოუკიდებლობის Chi-კვადრატის ტესტებით.

შედეგები: კვლევის შედეგებმა გამოავლინა რომ ყბა-სახის დაზიანებები უფრო ხშირია მამაკაცებში. 598 პაციენტიდან რომელთა ასაკი მერყობდა 1 თვიდან და 87 წლამდე, 67% მამაკაცი იყო, ხოლო - 33% ქალი, რაც მოიცავდა როგორც მხოლოდ ყბა-სახის ტრავმას ასევე კომბინირებულ დაზიანებებს. მხოლოდ ყბა-სახის დაზიანებით, მამრობითი სქესის პაციენტების რაოდენობა კვლავ მეტი იყო, 51% (307), მდედრობითი სქესის პაციენტებთან შედარებით 28% (167), ამ შედეგებმა მოგვცა სტატისტიკურად მნიშვნელოვანი განსხვავება ( $p = 0.026$ ). ყბა-სახის დაზიანებების ძირითადი მიზეზები იყო დაცემა, რომელიც შეადგენდა 63%-ს (378 პაციენტი) მთლიანი დაფიქსირებული მონაცემებიდან, როგორც ბევრ სხვა ქვეყანაში.

დისკუსია/დასკვნა: დასკვნის სახით, ამ კვლევების შედეგები იძლევა მართლაც მნიშვნელოვან მონაცემებს, რათა ქვეყანაში სამომავლოდ მოხდეს დაზიანებების თავიდან აცილება. ეს ასევე გვაჩვენებს, რომ საზოგადოების განათლება პრევენციის სტრატეგიებით არსებითია.

საკვანძო სიტყვები: ეპიდემიოლოგია, საქართველო, ჰოსპიტალიზირებული პაციენტი, ყბა-სახის დაზიანება, რეტროსპექტული კვლევა.