# GEORGIAN MEDICAL MEWS

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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 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 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.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.

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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. მიკროფოტო-სურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სუ-რათის 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.

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# ASSESSMENT OF THE SOCIAL AND MEDICAL ASPECTS OF SUICIDE IN THE REPUBLIC OF ARMENIA

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### Abstract.

**Introduction:** The objective of the article is to consider the social and medical factors which contribute to the number of suicides in the Republic of Armenia. The study covers the suicide data for the period of 2011-2020. The article provides statistical data on gender and age aspects of suicide. The paper overviews the works of contemporary authors on the social aspects of the problem. The results of the study will contribute to the further development of the effective methods to prevent suicide.

**Objective:** The objective of the study was to investigate and assess the socio-medical aspects of suicide in the RA.

**Material and methods:** The subject of the study was the data on suicides in the Republic of Armenia in 2011-2020. Standard statistical methods of data analysis were used to compare the data obtained, to assess their reliability, to determine the standard statistical and mean error, reliable difference between absolute and relative values.

**Results:** The study revealed 1858 suicide cases, registered in the Republic of Armenia over 10 years. The structure analysis of the suicides by gender in the Republic of Armenia from 2011 to 2020 has shown that males predominated in the structure of suicides over the whole period. Among the motivations of suicide, the ones that deserve attention are diseases, social problems, and bereavement.

**Conclusion:** The results obtained will contribute to suicide prevention.

**Key words.** Suicide, statistical analysis, social aspect, motive.

# Introduction.

The word 'suicide' comes from the ancient Latin 'mors voluntaria' which literally translates as 'voluntary death' [1]. Currently, the word suicide is used to refer to 'act of killing oneself' (from modern Latin sui and caedere). According to the World Health Organization (WHO), one person around the world dies by committing suicide every 40 seconds [2]. Furthermore, suicide is the second leading cause of death in young people aged 15-29 all over the world. Every day, 3 thousand people commit suicide in the world, and annual number of suicidal deaths is about 1 million people (which is 1.5% of all deaths). The lowest suicide rates are observed in Latin America, Arab and some Asian countries. The medium suicide rate is in Central and Northern Europe, North America, Southeast Asia and the Western Pacific (Australia, Canada, India, New Zealand, USA). The highest suicide rate in the last few years has been recorded in Lithuania, Belarus, Russia, Sri Lanka, Kazakhstan, Hungary, Japan, Ukraine and Latvia.

Adolescence is considered the most difficult period in the life of every person, since it is when a person undergoes personality development, when values and priorities are established. The onset of puberty, which occurs in adolescence, is characterized by hormonal changes, so adolescents who are more prone to emotional stress, become irritable and aggressive, experience mood swings, and react impulsively to ordinary phenomena. Lacking experience, teenagers have problems finding solutions and get discouraged when faced with difficulties. This might lead to suicide ideation in particularly sensitive and vulnerable children [3,4].

Currently, the number of teenagers, involved in various social networks which empower suicide, has increased. The concept of cyber- suicide i.e., groups or individual suicide influenced by websites on the Internet, emerged in 2004 [5].

Alcohol consumption can be considered as a specific way of a suicidal behavior. Alcohol consumption, or rather its abuse, is found to be the most explicit factor of high mortality in Russian men. Alcohol abuse can end up in poisoning, cause fire death, drowning death, road traffic fatality, etc. Less obvious, but the fact is that alcohol abuse causes renal and pancreatic diseases, mental and behavioral disorders. Thus, risky alcohol consumption should be attributed to a particular suicide method, which can be defined with a concept of 'optional phenomenon' [6]. 'Optional phenomenon' was defined by E. Durkheim as a mental illness, manifested in neglect towards one's health and life [7].

The socio-medical aspects of this problem have not been actually studied in the Republic of Armenia.

**Research objective**. To study and assess the socio-medical aspects of suicide in the RA.

# Materials and methods.

The subject of the study is the data on suicides in the RA in 2011-2020.

Standard methods of statistical analysis were used to compare the data obtained, to assess their reliability, to determine the standard statistical and mean error, as well as reliable difference between absolute and relative values [8].

To solve the tasks the following statistical methods were used:

- 1. Retrospective method
- 2. Statistical method including multifactorial (systemic) analysis.

During the examination the following criteria were considering:

- Gender
- Age group
- · Year of suicide
- Place of suicide (administrative unit in RA).

By the help of statistical methods, the following indicators were determined:

1. Indicator of suicides mortality intensity (P) per 100.000 of

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Table 1. Motives of suicide over the period of 2011-2020 in the RA.

Year	Motives of suicide										Number of suicides
	Terminal disease (except for mental condition)	Mental disease	1	Religion	Beating and torture	Bereavement	Love and jealousy	As a result of committing a crime	Social factor	Unknown or other motive	
2011	19	18	0	0	0	7	8	0	34	109	195
2012	27	26	0	0	1	12	4	3	41	100	214
2013	19	44	0	0	1	20	3	0	34	82	203
2014	25	26	0	0	0	10	5	0	37	65	168
2015	23	28	0	0	0	20	2	1	36	98	208
2016	26	23	0	0	1	24	2	2	37	80	195
2017	23	21	0	0	0	23	1	0	32	57	157
2018	30	17	0	0	1	21	2	0	25	83	179
2019	18	20	0	0	1	18	0	1	33	62	153
2020	20	25	0	0	1	15	2	0	18	102	183

population and average mistake (m) using the formula

$$P = \frac{n*100000}{4}$$
, where n is the number of observations

△ is population amount in RA during different years including 2011-2020 time period.

2. Intensive indicator of suicides mortality (P) per 100.000 population and average mistake (m) was calculated by the formula

$$P = \frac{n*100000}{\Delta}$$
, where n is the number of observations  $m = \sqrt{\frac{P*(100000-P)}{\Delta}}$ , where m is an average mistake

- P is the indicator gained during the examination
- $\Delta$  is population amount in RA during different years including 2011-2020 time period.
- 3. Sertainity of received data by Students coefficient

$$t = \frac{P_1 - P_2}{\sqrt{m^2_1 + m^2_2}}$$
, where

- P<sub>1</sub> and P<sub>2</sub> are comparable indicators
- m<sub>1</sub> and m<sub>2</sub> are average mistakes of comparable indicators.
- 4. x² independent test usage to explain the presence of connection in categoric variables (e.g., age group, diseases, etc.). As a basic hypothesis the fact of independence of variables were admitted. The test performed by 95% of certainty limit. If during the test the certainty coefficient is less than 0.05 (p<0.05), the connection between variables is proofed.

# Results and discussion.

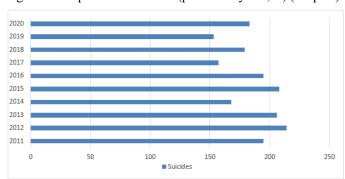
The analysis revealed that

- In 10 years, 1858 suicides were registered in Armenia.
- A pronounced upward tendency in the number of suicides is observed in 2012.
- A downward tendency in the suicide incidence rate in Armenia is observed in 2014, 2017 and 2019.
- Changes in the index value are insignificant in 2013, 2015, 2016, 2020.

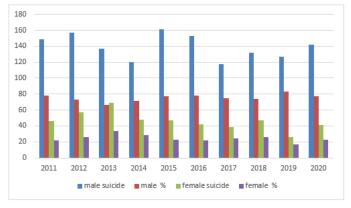
Graph 1 show the distribution of suicides in RA during 2011 -2020.

Graph 2 show the suicide rate by gender in the Republic of Armenia during 2011-2020.

The analysis showed that during the whole examined time period intensive coefficient of suicides in men was always higher as compared with females (p was always <0.05) (Graph 3).



Graph 1. Suicide rate in the Republic of Armenia over the period of 2011-2020 (calculated per 100,000 resident population).



Graph 2. Suicide rate in the Republic of Armenia over the period of 2011-2020 by gender calculated per 100,000 resident population).

The analysis shows that compared to 2011.

· Suicide incidence rate among males did not display any

statistically significant changes. All variations had the character of a trend. In 2014, 2017, 2019 the index decreases, while the growth was observed in 2012, 2015, 2016 and 2020. In 2013 and 2018 it actually remained the same as it was in 2011.

• A statistically significant increase in suicide incidence rate was observed among females in 2013. In 2019, there was a downward trend, while clear upward trend was observed in 2012. The other years were marked for either an increase or insignificant decrease.

We've also studied the number of suicides among males and females between 2011 and 2020 to provide a comparative assessment of the rates.

Although the suicides in the Republic of Armenia predominated among males, the issue was observed among the female population as well.

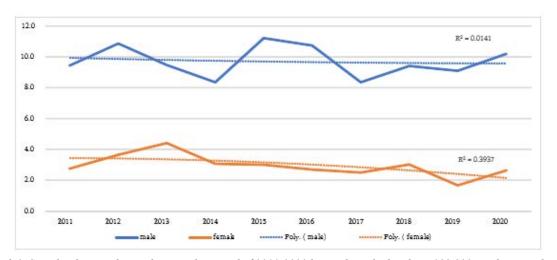
Variations in the level of the suicidal rate among males over the period studied exhibited general tendency to increase (with the exception of a few initial years). The suicide rate among females, however, did not have a clear tendency, variations may indicate changes in the existing situation, although in most cases they were merely tendentious. Suicide structure analysis by gender in the Republic of Armenia during 2011-2020 showed that, suicides among males predominated during the whole period studied. The peak was noted in 2019 and the lowest rate was observed in 2013.

Based on the above data, we can state that male population should be in the focus of attention while planning programs to prevent and reduce the level of suicides. However, it should also be noted that suicides among females on average made one thirds of all the cases, which is rather significant indicator.

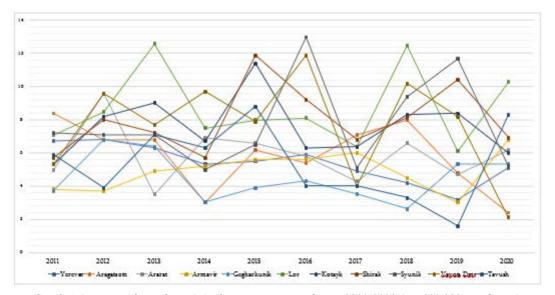
The analysis showed (Graph 4), that in Yerevan during 2018-2019-year period, as compared with 2011, suicide intensive coefficient was statistically decreasing, whereas during other years it had tendency to increase (2012) or decrease (2013-2017, 2020).

In different administrative units of RA, there was significant increase in suicide cases during 2019-2020-year period in Lori and Tavush regions (Graph 4).

- The highest incidence of suicides was in Yerevan city with variations ranging from 28,37 (2015) to 48,8% (2019).
- In Yerevan and 4 administrative units (Shirak, Ararat, Lori, and Kotayk) the summarized value in 2011-2022-year period was varying from 61,0 (2016)-to 75,8% (2019) limits.



Graph 3. Suicides dynamic by gender over the period of 2011-2020 by gender calculated per 100,000 resident population).

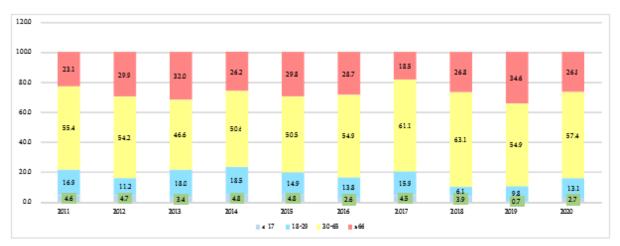


Graph 4. Dynamic of suicides in RA administrative units during 2011-2020 (per 100,000 population).

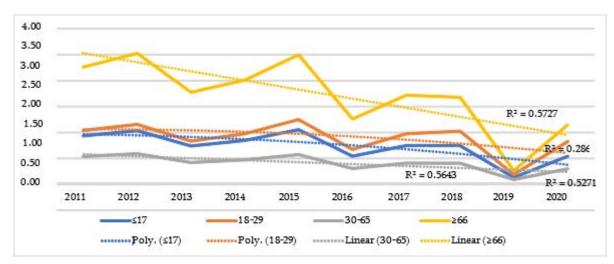
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Graph 5. Structure of suicide (%) in RA by administrative units during 2011-2020-year period.



Graph 6. Structure of suicides by age in RA during 2011-2020-year period (%).



Graph 7. Suicides by linear approximation in RA during 2011–2020-year period.

• The lowest suicide incidences during the aforementioned time period were in Siunik, Vayoc dzor and Tavush (Graph 5).

According to the examination results, the highest rate of suicides where in the age group of 30-65, second and third place were in 18-29 and over 66-year-old age group (Graph 6 and Graph 7).

The examination showed, with the exception of age group up to 18-year-old, in all age groups variations in suicide curvilinear had tendency to increase in 2020.

- With the exception of group of up to 18-year-olds, in all the remaining groups suicides linear variations were manifested by increased tendency in 2020.
- In the age group above 66-year-old, the lines were with sharp increase and decrease parts, which stated that in this age group the situation concerning suicide was unstable.

We have studied the motive of suicides in the Republic of Armenia over the period of 2011-2020. The information was provided by the Police of RA. This information is also available on the official website of the Statistical Committee of the Republic of Armenia [9].

Table 1 shows the motives of suicide and their absolute number. Among all the listed reasons, the ones which should attract special attention were terminal diseases (except for mental condition), mental disease, bereavement, and social factors. If terminal disease and mental condition regarded as one category, then disease came first as the predominant motive, followed by social problems and bereavement. Other reasons were less common, while ''unknown or other motive'' of suicides mainly included an unspecified motive and predominated over all the aforementioned groups of motives.

Summarizing the above, we can conclude that:

- Gender-related suicide rates observed in Armenia are both tendentious and statistically significant.
- Suicide prevention measures should target both males and females (including adolescents).

Data analysis reveals that as compared to 2011

- Suicide incidence rate among adolescents under 18 tends to fluctuate. An increase is observed only in 2012 and 2014, while in other years the rate decreases slightly. A significant decrease was recorded in 2019, while there is a growth in rate in 2020.
- Suicide rate remains almost at the same level in the 18-29 age group, with only a slight increase or decrease during the years studies, with the exception of 2018 and 2019, when statistically significant decrease is observed.
- The rate in the 30-65 age group tends to decrease only in 2013, 2014, 2017 and 2019. There is an upward trend observed

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in other years.

- In the group of people aged 66 and older, the fluctuations of the suicide rate are rather pronounced and significant growth in the rate is observed in 2012-2013. There is a pronounced upward tendency in 2015 and 2016, while in other years, the incidence rate either remains almost unchanged or tends to decrease.
- Over the entire period of the study, the highest ratio of 46.6 63.1% was observed in the 30-65 age group, followed by the age group of 18-29 as well as 66 and older with ratio ranged 13.1-31.8% and 12.1-34.6%, respectively.
- Among those who committed suicide, people of working age predominate (18-65 years).
- The number of people who committed suicide before the age of 18 was low (the ratio ranged from 0.7-7.8%). This age group was not numerous in the Republic of Armenia, as compared to other countries.
- Although small in number, this age group was of particular importance.
- Despite the small number, the group of adolescents under 18 years of age was extremely important in terms of possible suicide prevention. It is known fact that it is in this age group that it a reduction in suicide level can be achieved by applying scientific approaches to the formation of a balanced and healthy critical attitude of adolescents towards life, themselves, and others.

## Conclusion.

Based on the examination result concerning suicides in RA we came to the following conclusions:

- Suicides were mainly observed among males.
- The motives of suicides in predominant cases were unknown or non-specified. From the determined cases of known moves suicides were mostly related to a disease (terminal disease, mental condition), social problems and bereavement.
- Variations in suicide incidence rate in Armenia were conditioned by some characteristic features, such as an age-dependent factor, which was expressed as a statistically significant or rather pronounced increase in indicators.
- In all age groups, variations were predominantly of tendentious character. Downward trend was observed in subjects under the age of 18. A certain growth trend was found in the group aged 18-29, and there was an upward trend change observed in subjects aged 30-65, as well as in the group aged 66 and older.

• The results obtained, as well as understanding the structure of suicides in different age, gender groups, administrative units of RA may be helpful in subsequent possible prevention of potential suicides.

# Additional information.

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**Competing interests.** The authors declare that they have no competing interests.

Authors' contribution. M.S. Bisharyan, A.B. Dallakyan — data collection, review, and approval of the final manuscript; A.B. Dallakyan — drafting manuscript; M.S. Bisharyan — critical revision of the manuscript for essential analytical content. The authors have made a significant contribution to the concept of the work, collection, analysis, data interpretation, drafting and editing manuscript, final approval of the version to be published and agree to be accountable for all aspects of the work.

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