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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 ბაზებშიდან.

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. 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.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. რენტგენოგრაფიების 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.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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EVALUATION OF KNOWLEDGE AND ATTITUDE REGARDING CERVICAL CANCER SCREENING PRACTICE: A MULTICENTER REGIONAL STUDY

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Abstract.

Background: The prevalence of deaths from cervical cancer (CC) in the world was around 350.000 in the last 5 years, indicating the need to analyze the potential causality and current management approaches. This study aimed to evaluate the level of knowledge regarding CC, including its risk factors, signs and symptoms and early detection methods, as well as the awareness and attitude of participants toward the screening tests.

Methods: This cross-sectional study was conducted between August and October of 2023 in a representative sample of 18-59 years old Armenian women. Data were generated using structured interviews with self-administered questionnaire and adopted from similar studies and translated into Armenian.

Results: Majority of the survey respondents demonstrated moderate awareness about the risk factors, signs and symptoms of the condition. The poorest knowledge regarding the preventive colposcopy screening method of CC was observed. Comparison of demographic characteristics of participants and their awareness regarding the inquired topics revealed evident relationship between the disease rate and studied variables. A strong relationship was observed between the awareness of CC risk factors and CC symptoms of the disease and age groups, residency, number of children, insurance and employment status, level of education and level of income.

Conclusion: The short period of the survey and a fast track of data analysis with independent variables has revealed the region-specific current rates for the assessed variables and their relationship. The study added more facts to the existing body of knowledge about the implementation strategies and limitations of CC screening programs.

Key words. Cervical cancer, screening methods, awareness, risk factors.

Introduction.

Cervical cancer (CC) ranks fourth among the most commonly diagnosed neoplasia in women, is the fourth leading cause of cancer deaths from in female population on average in the world and the leading cause of death from cancer in developing countries [1]. The malignant tumors of the female reproductive system affect patient's life quality, life expectancy and reproductive function. In 20–40% of cases this malignancy is detected in women of childbearing age [1].

The prevalence of deaths from cervical cancer has fluctuated between 300.000 and 350.000 in the last 5 years. About 85% of global cervical deaths occurs in a number of low- and middle-income countries. In these countries, the mortality rate is 18 times higher than in developed countries [1,2], where the CC mortality accounts for an average of 4.4% [3,4].

The incidence of cervical cancer in Republic of Armenia (RA) is close to the average rate of CC rates registered in developing countries. The estimates of the CC incidence in Armenia for

the last 12 years were in the range of 257-278 cases per year, without any decrease in the rate for the last 5 years [5-7]. The constant high rate of CC incidence in the country requires more attention from the health system to analyze the potential causality and management approaches for this malignancy with the worrying incidence.

Over the past 15 years, the morbidity incidence of cervical cancer registered in the country has also been troublesome, estimated in the range of 2200-3000 cases per year [8-12].

The highest CC incidence in RA was detected in the III-IV stages of the malignancy, requiring radical management strategies and leading to the loss of fertile function in younger stratum of population. The incidence rates of CC for 2020 and 2021 estimated via the pathomorphological data as malignancy in III-IV stages were respectively 124 and 119 confirmed cases, being two times higher than the incidence of CC in the I-II stages (47 and 58 confirmed cases respectively) [5-7,9].

Some improvement trends were observed in 2022. In that year 104 and 107 cases were registered in the I-II and III-IV stages respectively [7].

The highest prevalence of CC for the period of 2012-2023 was observed in the age group 45-54, followed by the age category older than 60 (2nd position) and the third position was for the age group 54-59 (since 2016). Inexplicable high incidence of CC was registered in the 18-24 years old age category of women. The rate for this age category was in third position before 2016. The women aged 25-44 years continuously had the lowest prevalence for the period of 2013-2022 [6].

The mortality range in the Republic of Armenia for the period of 2015-2022 ranged from 58 to 76 cases per year. Such a high rate of mortality has motivated the health system to conduct periodic screening of childbearing age women to prevent cervical cancer via detecting precancerous conditions or cancer at non-advanced stages [9-12]. In 2015 Armenia launched a national screening program for women aged 30–60 years aimed to decrease cervical cancer morbidity and mortality. The goal of the screening program was to cover at least 50 000 cohort of eligible population per year by 2021.

This cross-sectional based study conducted in a representative sample cohort aimed to evaluate the level of knowledge regarding cervical cancer, including its risk factors, signs and symptoms and early detection methods. The study has targeted also the awareness and attitude of participants toward the cervical cancer screening tests.

Materials and Methods.

This cross-sectional, descriptive study was carried out between August and October of 2023 in a representative sample of 18-59 years old Armenian women. The study protocol conforms to the ethical guidelines of the 1975 Declaration of Helsinki as reflected in the approval by human research committee. All

participants gave written informed consent to participate in the trial and to use their data. The protocol was approved by the Ethics Committee of Named after S. Kh. Avdalbekyan National Institute of Health (Republic of Armenia). All procedures used in the study involving human participants were in accordance with the ethical standards of the Ministry of Health (MOH RA).

The sample cohort of the study included Armenian females living in Armenia for 18 years or more. Stratified random sampling was used to select participants from 11 regions of Armenia and Yerevan (the Capital). The sample was obtained from clinics, hospitals and health care centers. The determined representative sample included 1250 women (100 from every region and 150 from Yerevan) with 99% confidence intervals, and a margin of error of $\pm 5\%$. A total of 1250 questionnaires were distributed. The response rate was 96.4% (1205 participants returned the questionnaire). Seven participants were excluded because they were not Armenians. The final number of participants who met the inclusion criteria was 1198 women.

Data were generated by using structured interview with self-administered questionnaire and adopted from similar studies and translated into Armenian [13-16]. For data collection and analysis, the English version was translated into Armenian, and the two versions were compared via the reverse translation and checked for equivalency by bilingual research experts.

Content validity of the questionnaire was assessed. The purpose was to indicate whether the questionnaire instrument appears logical to a group of experts. A panel of oncologists ($n = 2$), gynecologists ($n = 2$), two experienced researchers with an academic degree, and two patients with CC evaluated the questionnaire for content validity. The panel members have used the questionnaire in a pilot survey with 10 patients and provided feedback on how well each questionnaire point measures the construct in a question. The evaluation was addressing several key points: the goals of measurement, the target population, analysis of concepts (important aspects) targeted by the measurement, selection of questions, as well as concision or relevancy. The time to complete the questionnaire was indicated approximately 20 to 25 min.

All participants of the current study provided a signed written consent for participation. The adopted questionnaire consisted of four parts. The first part was to verify the social-demographic characteristics of respondents (eleven criteria, including age, education level, area of residency, employment status, marital status and number of children in the family, health insurance coverage, estimated monthly income level, health status, family history of CC). The second part aimed to reveal the participant's knowledge of CC risk factors, including HPV, parity, smoking etc. (11 items). The third domain of the questionnaire examined the knowledge about cervical cancer signs and symptoms (consisted of 5 items); The last, fourth part included questions, evaluating the awareness about CC rate in population, early detection methods, curability rate, overall and local incidence of cervical cancer in women. The last domain included questions inquiring about the possible impact of early detection and awareness on the survival rate of the patients with this malignancy. The questions assessed the knowledge of respondents about prevention methods, such as medical check-

up, screening methods (cytology-based screening, colposcopy-based screening, HPV test), HPV vaccination and their attitude towards the efficacy of these measures in Armenia. Total amount of questions in this domain matched the other subsets (11 questions). Knowledge questions were designed to be answered with "Yes", "No" or "Don't know".

Data Processing and Statistical Analysis.

Data were analyzed by the Statistical Package for Social Sciences (SPSS) software version 23.0 (SPSS®): Inc., Chicago, IL, USA). The frequencies and percentages were calculated. Questions related to knowledge measure were calculated by adding the correct answers, then dividing them by the overall number of questions related to the parameter of interest to be measured then multiplying the number by 100%.

A self-developed scale was used to report the results as poor knowledge (0%–32.99%), intermediate knowledge (33%–67%), good to excellent knowledge (>67%). Comparisons between socio-demographic data and knowledge about risk factors, signs and symptoms were measured using the Chi-square test. The chosen level of significance was at ($P \leq 0.05$).

Results.

The Social-demographic Characteristics of the Study Participants:

Socio-demographic indicators among the cohort are represented in Table 1. About 65% of the study sample were less than 45 years old. The dominating education level was university diploma (44.1%). More than half (59.9%) were from urban areas. The 50 % of participants were married, 67.9% had at least one offspring. At the time of the survey, the rate of employment was 54.0%, not employed participants were 29.6% and the 16.4% were students. 36.1% of the respondents were health insurance beneficiaries.

The main part of the participants had an income ranged in the intervals 120–320.000 AMD (\$300–800) - 48.6% or 320–600.000 AMD (\$800–1.500) - 35.2% at the moment of the survey implementation. The majority of the respondents have estimated their health status as "good" (43.6%). Only 10% of the cohort representatives have reported CC positive family history.

Knowledge and belief about CC prevalence, treatment and prevention methods, curability and screening programs.

The data regarding knowledge and belief about CC prevalence, treatment and prevention methods, curability and screening programs are represented in Table 2. The participants demonstrated moderate awareness regarding the fact that the CC is one of the most common cancer type among women in the world and Armenia (correspondingly 49.6 % and 46.8 %). The absence of knowledge (the answer "Don't know") was registered in 25.3% and 8.3% proportionally regarding CC prevalence in the world and in Armenia. Furthermore, the respondents showed good and excellent knowledge about early detection as a factor, improving the chance of curability and survival (71.7%). Medical checkup was mentioned as a prevention method for CC in 68.5%, which is as a rather high rate for the representative sample. The knowledge about methods of screening was

Table 1. The Social-demographic characteristics of the Study Participants' Sample.

N	Indicators	% (N)
1.	Age	
	18-24	18.3% (219)
	25-34	21.8% (261)
	35-44	27.7% (332)
	45-54	15.4% (184)
	55-59	16.9 (202)
2.	Education	
	Secondary school	5.4% (65)
	Secondary Special/Vocational	45.1% (540)
	University diploma	44.1% (528)
	PhD	5.4% (65)
	Residency	
	Urban	59.9% (718)
	Rural	40.1%(480)
	Residence Area	
	Yerevan	11.6% (139)
	Gegharkunik	7.92% (95)
	Gavar	8.26% (99)
	Tavush	8.26% (99)
	Vayk	7.68% (92)
	Vayots Dzor	8.34% (100)
	Aragatsotn	8.34% (100)
	Shirak	8.26% (100)
	Lori	8.18% (98)
	Ararat	7.59% (91)
	Armavir	7.92% (95)
	Kotayk	7.59 % (91)
	Marital status	
	Married or living together	49.1%(588)
	Single	20.28%(243)
	Divorced/separated	18.7 % (224)
	Widowed	12.0%(143)
	Children	
	Yes	67.9%(814)
	No	32.1% (384)
	Employment Status	
	Working	54.0% (647)
	Non-working at the moment	29.6% (354)
	Student	16.4% (197)
8.	Insurance	
	Yes	36.1% (433)
	No	63.9% (765)
9.	Estimated Monthly Income	
	<120.000 AMD (<\$300)	8.1 % (97)
	120–320.000 AMD (\$300–800)	48.6% (582)
	320–600.000 AMD (\$800–1.500)	35.2 % (422)
	>600.000 AMD (>\$1.500)	8.1% (97)
10.	Health Status (by self-estimation)	
	Excellent	18.4% (221)
	Good	43.6% (522)
	Poor	38% (455)
11.	Family history of Cervical Cr	
	Yes	10.4% (125)
	No	66.8% (800)
	Don't know	22.8% (274)

Table 2. Knowledge and belief about CC prevalence, treatment, prevention methods, curability and screening programs.

N	Indicators	N (%)
1.	Cervical cancer is very common cancer among women in the world	
	Yes	594 (49.6 %)
	No	301 (25.1 %)
	Don't know	303 (25.3 %)
2.	Cervical cancer is very common cancer among women in the Armenia	
	Yes	561 (46.8 %)
	No	537 (44.8%)
	Don't know	100 (8.3 %)
3.	Early detection improves the chance of curability and survival	
	Yes	858 (71.7 %)
	No	240 (20.0%)
	Don't know	100 (8.3%)
4.	Prevention of CC includes early detection of pre-cancer conditions	
	Yes	667 (55.7 %)
	No	445 (37.1 %)
	Don't know	86 (7.2 %)
5.	Medical check-up is Prevention method of CC	
	Yes	821 (68.5%)
	No	272 (22.7%)
	Don't know	105 (8.8%)
6.	Cytology based screening is prevention method of CC	
	Yes	391 (32.6%)
	No	706 (58.9 %)
	Don't know	101 (8.4 %)
7.	Colposcopy based screening is prevention method of CC	
	Yes	299 (25.0%)
	No	539 (45.0%)
	Don't know	360 (30.0%)
	HPV testing based screening is prevention method of CC	
	Yes	410(34.2%)
	No	428 (35.8%)
	Don't know	360 (30.0%)
9.	HPV vaccination is prevention method of CC	
	Yes	706 (58.9 %)
	No	281 (23.5%)
	Don't know	211 (17.6 %)
10.	Do you have positive relation to CC screening measures?	
	Yes	495(41.3 %)
	No	354(29.5%)
	Don't know	349(29.2%)
11.	Do you think that CC screening programs have high efficacy in Armenia?	
	Yes	523(43.7%)
	No	354(29.5%)
	Don't know	321(26.8 %)

Table 3. Relationship of knowledge regarding CC risk factors and CC symptoms and signs with the social - demographic data.

VARIABLE	KNOWLEDGE REGARDING RISK FACTORS			P-value χ^2 test	KNOWLEDGE REGARDING SYMPTOMS AND SIGNS			P-value χ^2 test
	Poor	Intermediate to Good	Excellent		Poor	Intermediate to Good	Excellent	
Total	316 (22.5%)	709 (47.5%)	173 (30.0%)		318 (27.6%)	739(45.8%)	141(26.6%)	
Age, Df=8								
18-24	71 (27.8%)	125 (45.7%)	28 (26.3%)	<0.001 65.3	41(19.6%) (219)	147 (52.5%)	30(27.9%)	<0.001 85.0
25-34	68 (22.2%)	144 (45.6%)	40 (32.1%) (261)		53(21.5%) (261)	155(43.7%) (261)	39(33.0%) (261)	
35-44	35 (9.0%)	224 (54.8%)	56 (36.1%)		59(18.3%) (332)	238(48.7%)	48(37.3%)	
45-54	81 (37.5%)	96 (41.8%)	19(20.7%)184		78 (44.0%) 184	105(45.7%)184	8 (10.3%)184	
55-59	61 (25.7%)	120 (45.0%)	30 (29.3%)		87 (44.6) (202)	94 (36.6%)	16(18.8%)	
Educational level, Df=6								
Secondary school	27(36.9%)	33(46.2%)	9(16.9%)	0.04985 12.59	33(43.1%)	27(41.5%)	7(15.4%)	<0.001 52.0
Secondary Special/ Vocational	115(37.0%)	296(50.4%)	58(12.2%)		157(25.0%)	303(55.2%)	76(19.8%)	
University diploma	156(20.6%)	337(58.9%)	89(20.5%)		123(19.9%)	367(68.2%)	45(12.1%)	
PhD	18(7.7%)	43(6.0%)	17(32.3%)		5(7.7%)	42(64.6%)	13(27.7%)	
Residency, Df=4								
Urban	101(16.3%)	488(58.6%)	141(25.1%)	<0.001 161.4	186 (14.6%)	470(64.2%)	120(21.2%)	<0.001 121.3
Rural	215 (52.1%)	221(39.6%)	32(8.3%)		132 (39.8%)	269(54.6%)	21(5.6%)	
Residence area, Df=22								
Yerevan	25(18%)	91(65.5%)	23(6.5%)	0.0692 32.5	34 (24.5%)139	84(60.4%)	21(15.1%)	0.0397 34.9
Gegharkunik	28(29.5%)95	48(51.6%)	18(18.9%)		32 (33.7%) (95)	54(56.8%)	9(9.5%)	
Gavar	28(28.3%)99	57(57.6%)	14(14.1%)		29(29.3)99	59(59.6%)	11(11.1%)	
Tavush	32(32.3%)99	60(60.6%)	7(7.0%)		34(34.3%)99	59(59.6%)	6(6.1%)	
Vayk	27(29.4)92	52(56.5%)	13(14.1%)		33(0.33)92	50(54.3%)	9(9.8%)	
Vayots Dzor	28(28.0)100	59(59.0%)	13(13.0%)		22(22.0)100	63(63.0%)	15(15.0%)	
Aragatsotn	32(32.0)100	51(51.0%)	17(17.0%)		32(32.0)100	59 (59.0%)	9(9.0%)	
Shirak	30(30.0)100	60(60.0%)	10(10.0%)		32(32.0)100	57(57.0%)	11(11.0%)	
Lori	25(25.5)98	61(62.2%)	12(12.2%)		12(12.2)98	72(73.5%)	14(14.3%)	
Ararat	23(25.3%)91	54(59.3%)	14(15.4%)		22(24.2%)91	56(61.5%)	12(14.3%)	
Armavir	26 (27.4%) (95)	59(62.1%)	10(10.5%)		20 (21.1%)95	64(67.4%)	11(11.6%)	
Kotayk	12(13.2)91	57(62.6%)	22(24.2%)		16(17.6%)91	62 (68.1%)	13 (14.3%)	
Marital Status, Df=6								
Married or living together	148(22.6)	362(%)	77(%)	0.2309 8.18	163(21.7%)	378(56.5%)	61(21.8%)	0.7962 3.1
Single	57 (21.0%)	147(%)	38(%)		60(19.3%)	147(53.1%)	32(27.6%)	
Divorced/ separated	63(25.5%)	120(54.9%)	40(19.6%)		57(20.1%)	133(52.2%)	29(27.7%)	
Widowed	48(30.1 %)	80(56.6%)	18(13.3 %)		38(21.7%)	81(49.7%)	19(28.7%)	
Children, Df=2								
Yes	222 (15.7%)	526(74.2%)	70(10.1%)	<0.001 73.8	220 (15.0%)	548 (70.1%)	69(14.9%)	<0.001 37.2
No	94(14.1%)	183 (54.7%)	103(31.2%)		98 (16.4%)	191(52.1%)	72(31.5%)	
Employment Status, Df=4								
Working	172(13.1%)	426(74.5%)	58(12.4%)	<0.001 102.1	143(14.5%)	414(77.4%)	78(8.0%)	<0.001 58.7
Non-working at the moment	81 (11.3%)	219(70.3%)	47(18.4%)		86(15.8%)	235(80.2%)	21 (4%)	
Student	63(15.7%) (197)	64 (36.5%)	68 (47.8%)		89 (29.9%)	90 (55.3 %)	42 (14.7%)	
Insurance Df=2								
Yes	118 (21.2%)	241(69.3%)	103(9.5%)	<0.001 38.58	115(20.8%)	250 (68.8%)	92(9.9%)	<0.001 50.26
No	198(20.1%)	468(76.2%)	70(3.7%)		203(20.8%)	489(76.1%)	49(3.1%)	

Income, Df=6				<0.001 99.26	6(67.0%)	28(22.7%)	55(10.3%)	<0.001 103.9
<120.000AMD (<\$300)	54 (61.9%)	26(21.6%)	10(16.5%)					
120– 320.000AMD (\$300–800)	182(34.4%)	348(48.1%)	63(17.5%)					
320– 600.000AMD (\$800–1.500)	64(16.6%)	268(51.2%)	84(32.2%)					
>600.000 AMD (>\$1.500)	16(18.5%)	67(55.7%)	16(25.8%)					

poor (32.6% and 25.0 % for cytology and colposcopy based screenings correspondingly). The scores for answers to other questions including HPV vaccination & efficacy of screening programs in Armenia were ranged in intermediate level of awareness (58, 9% and 43,7% respectively). The attitude of the participants to the screening program was also estimated as moderate (positive opinion was reported by 41, 3%).

Early detection of pre-cancer conditions as a CC prevention method improving the chance of curability and survival in patients was mentioned by 71.7% (excellent level of awareness) and 55.7% (moderate level of awareness) of respondents respectively.

Relationship between social - demographic variables and knowledge regarding CC risk factors and manifestations.

The data concerning relationship between knowledge regarding CC risk factors and CC manifestations and the social-demographic characteristics is shown in table 3. As anticipated, there is no association between the residence area and data categories of knowledge about the risk factors (χ^2 value=32.51, df=22, $p>0.06926$) and manifestations (χ^2 value=34.9, df=22, $p=0.03969$). The significant difference was revealed between the knowledge of cervical cancer risk factors (χ^2 value=65.3, df=8, $p<0.001$) and age as well as between knowledge about the symptoms of the disease and age (χ^2 value=85.5 df=8, $p<0.001$). The strong association between residency (χ^2 value=161.4, $p<0.001$, χ^2 value=121.3, $p<0.001$ respectively for risk factors and signs df=4), number of children (χ^2 value=73.8, $p<0.001$, χ^2 value=37.2, $p<0.001$ respectively for risk factors and symptoms df=2), being or not being insured (correspondingly χ^2 value=38.58, $p<0.001$ and χ^2 value=50.26, $p<0.001$ for df=2), level of education (χ^2 value=52.0, $p<0.001$, χ^2 value=12.59, $p<0.001$, df=6), employment status (χ^2 value=102.1, $p<0.001$, χ^2 value=58.7, $p<0.001$, df=4) and income level (χ^2 value=99.26, $p<0.001$, χ^2 value=103.9, $p<0.001$, df=6) was observed. This is the enough evidence of these factors' high influence on the knowledge regarding risk factors and signs. There was not enough association between the marital status data and awareness regarding the signs and symptoms of CC (χ^2 value=3.1, df=6, $p=0.7962$). No significant association was also observed between marital status data and knowledge scores about CC risk factors (χ^2 value=8.18, df=6, $p=0.2309$).

Discussion.

Overwhelming majority of the survey respondents demonstrated moderate awareness about the inquired topics including risk factors, signs and symptoms of the condition. The

poorest knowledge regarding the colposcopy based screening as a prevention method of CC was observed (45% of respondents - negative answer and 30% - "Don't know"). The answer "Don't know" was registered in not more than 30% of respondents. Comparison of demographic characteristics of participants (age, education, residency, number of children, employment and insurance statement and income level) and their awareness regarding the risk factors, and signs and symptoms of cervical cancer rejected the null hypothesis with a very high probability. The comparative analysis demonstrated strong evidence of dependence between some of the variables: age, residency, number of children and their knowledge regarding both risk factors and signs and symptoms of CC.

A strong relationship was observed between the survey participants' awareness of CC risk factors and CC symptoms of the disease and age groups, residency, number of children, insurance and employment status, level of education and level of income.

Not only the high prevalence of cervical cancer is concerning for the health care system. The reported low rate of knowledge and awareness about cervical cancer screening programs is alarming evidence. Our study did not reveal the nationally representative lifetime prevalence of CC or the determining factors. However, the study results resemble the rate of awareness in Armenian females for the last 3-5 years. This period is required by the WHO guidelines for screening rates [17]. Our study results indicate that the high incidence of CC is primarily due to the low rate of awareness of screening tests in Armenian female population. Other estimated causes are the low sensitivity of applied screening tests, not properly developed referral systems for patients with positive CC screening and supposedly the low quality of care for CC diagnosis and treatment in many regions of the country.

Some of the regions included in the study have not reached the required by the WHO [5] target rate of 70% for CC screening. The analyses identified large differences in self-reported awareness rates among regions except for the capital city, where the number of medical centers is disproportionately high, the distribution of health care services is rather homogenous, as reported by the national medical registry, suggesting that many factors analyzed in this study may be rather important determinants of screening rates.

However, we did not have specific tools to assess the level of training and equipment availability for health care workers involved in CC screens, which potentially can affect the attitude of females who had participated in the study). This study was

focused only on data obtained entirely via the self-report, which can result in overestimation of the true cervical cancer screening prevalence. The mentioned condition is the limitation of our study. There is a possibility of data bias since majority of women who had a CC screening recall the uncomfortable screening procedure and respondents who did not have a screening reported having had one explained by the social desirability bias [18]. Nevertheless, relatively high level of awareness of the screening programs had limited the expected degree of bias from social desirability [19,20]. Lot of researchers report regarding low awareness about risk factors, signs and symptoms as a significant obstacle on the CC elimination way in developing countries [21-27]

An advantage of our study was the short period of the survey and a fast track of data analysis with country-level independent variables (2-3 months) to avoid confounding by time. Thus, the survey results represent the country's current rates of awareness and attitude regarding CC Screening Practice.

Conclusion.

The conducted survey demonstrated poor knowledge regarding colposcopy based screening as a prevention method of CC. Strong interconnection exists between awareness of CC risk factors and CC symptoms of the disease and age groups, residency, number of children, insurance and employment status, level of education and level of income. The short period of the survey and a fast track of data analysis with country-level independent variables has revealed the country specific current rates for the assessed variables. The study added more facts to the existing body of knowledge about the implementation strategies and limitations of CC screening programs.

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