

# **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 ბაზებშიდან.

### 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. Корректурa 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.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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## NURSES' AWARENESS AND ATTITUDES TOWARDS INFLUENZA VACCINATION: A STUDY IN GEORGIA

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### Abstract.

**Aim of Study:** This study aimed to investigate the attitudes and awareness of nurses in Georgia towards influenza vaccination, especially in light of the mandatory vaccination policy introduced for medical personnel.

**Material and Methods:** A cross-sectional survey was conducted with a sample of 455 Level 5 nurses, chosen from a population of 19000 registered nurses in Georgia. Participants completed a 16-question mixed-format questionnaire assessing demographic information, knowledge about mandatory influenza vaccines, and attitudes towards vaccination. Data analysis employed quantitative methods using SPSS, focusing on statistical measures such as mean, relative frequencies, standard deviation, and chi-square tests.

**Results:** The study found that 56% of nurses had received training on flu vaccination, but a significant portion (36.6%) had not, leading to varied levels of self-assessed knowledge. Over 61% of nurses had been vaccinated for the current season. Reasons for not receiving the flu shot included personal health concerns (14.7%), time constraints (14.7%), and fear of adverse effects (16.5%). Despite these concerns, 83.8% believed in the vaccine's effectiveness. Regarding mandatory vaccination, 50% supported voluntary vaccination, while 24.6% supported mandatory policies. The study also noted regional differences in vaccine uptake and found that a significant proportion of those opposed to mandatory vaccination had nonetheless been vaccinated.

**Conclusions:** The research underscores a need for improved educational initiatives to address the misconceptions about vaccine risks among nurses. Despite concerns over adverse events, the actual risk associated with influenza vaccination is low. The study advocates for enhanced communication strategies to bridge the gap between perceived and actual risks and to increase influenza vaccination uptake among nurses.

**Key words.** Influenza vaccination, nurses, vaccine hesitancy, mandatory vaccination, health education.

### Introduction.

Influenza is a major public health concern, known for its significant contribution to the global burden of respiratory infections and pneumonia, especially in the elderly population [1]. Its ability to mutate rapidly makes the influenza virus a persistent threat, with the World Health Organization reporting 3 to 5 million cases of severe illness and 290,000 to 650,000 respiratory-related deaths annually [2,3]. The

severity of influenza, often underestimated, can lead to critical complications and fatalities, particularly among vulnerable groups [4].

Vaccination is recognized as the most effective means of preventing influenza and its associated complications, serving as a key strategy in reducing the virus's impact [1,5]. High vaccination coverage among healthcare professionals is essential, as they face increased risks due to their occupational exposure and their crucial role in patient care [6,7]. For nurses, who are often the frontline caregivers and interact with a diverse patient population, the stakes are even higher. They not only risk their own health but also carry the potential to transmit the virus to the patients under their care [8].

However, vaccine hesitancy and variable uptake rates among healthcare workers, including nurses, are concerning issues. These challenges are rooted in knowledge gaps, misconceptions about vaccine safety and efficacy, and personal beliefs [9,10,11]. As a result, the influenza vaccination coverage among healthcare workers, notably nurses, remains critical for averting strains on the healthcare system and minimizing absenteeism due to respiratory illness [12]. The public health and economic advantages of seasonal influenza vaccination are well-documented, emphasizing its role in averting influenza-related events, hospitalizations, deaths, physician visits, and lost workdays [13].

Given the importance of nurses' roles in influencing vaccination uptake and their dual risk as potential transmitters of influenza, examining their attitudes, knowledge, and practices related to vaccination is crucial [14,15]. This study aims to delve into the factors that shape nurses' decisions regarding influenza vaccination, seeking insights that could influence targeted interventions, educational initiatives, and policy measures to enhance vaccine acceptance and coverage [16,17].

In 2019, the Ministry of Internally Displaced Persons from the Occupied Territories, Health, Labor, and Social Affairs of Georgia implemented Order 01-6/N, outlining mandatory preventive immunization activities, including hepatitis B, influenza, measles, and rubella, for nurses and other medical personnel. Coinciding with the onset of the Covid-19 pandemic, the order gained urgency, sparking discussions and debates around mandatory vaccination within medical circles. Assessing nurses' attitudes and awareness assumes paramount importance in gauging general trends and developing effective communication and vaccine implementation strategies in this dynamically evolving landscape.



## Materials and Methods.

### Study Aim and Design:

This cross-sectional study was designed to investigate the awareness and attitudes of nurses towards influenza vaccines, specifically in the context of the mandatory vaccination policy for medical personnel implemented in Georgia since 2019. Our hypothesis, informed by the existing literature, suggests that insufficient information and prevalent misinformation may contribute to vaccine hesitancy and negative attitudes towards mandatory influenza vaccination.

### Sample Size Determination and Statistical Rationale:

A comprehensive power analysis dictated the selection of a sample size of 500 Level 5 nurses to ensure statistical accuracy and representation of the broader nursing workforce in Georgia. The study defined a 95% confidence interval with a margin of error at  $\pm 2.29\%$ , capturing the attitudes towards influenza vaccination within the demographic. The confidence interval, from 47.71% to 52.29%, was calculated using the standard Z-score for a 95% confidence level, affirming the findings' statistical robustness and practical significance.

Stratified random sampling provided equitable representation from diverse geographical regions. The proportional allocation to these strata, based on the population distribution of Level 5 nurses, ensured an equal selection probability. Statistical software calculated the required sample size, considering the number of nurses, expected response distribution, and study outcome precision. Inclusion criteria targeted those employed as Level 5 nurses, excluding individuals on extended leave. From the initial group, 455 nurses completed the survey, yielding a 91% response rate and confirming the sample size's adequacy and the study's representativeness.

### Research Instrument:

The research instrument employed in this study was a survey questionnaire focusing on attitudes towards influenza and influenza vaccines. Organized into three blocks, the questionnaire collected demographic information in the first block, assessed awareness of mandatory influenza vaccines in the second, and delved into attitudes towards these vaccines in the third. The questionnaire, comprising 16 questions with a mix of close-ended and open-ended formats, was distributed in hard copy, and also made available through an online survey to members of the Union of Nurses.

### Ethical Considerations:

Ethical integrity was paramount in this study. Participation was strictly voluntary, with informed consent obtained from all respondents. Anonymity was ensured, as no personal identifiers were collected. This commitment to ethics underpinned all aspects of the study.

### Data Analysis.

Data processing was conducted using SPSS software, applying descriptive statistical techniques, the  $\chi^2$  test for homogeneity to evaluate group differences, and Student's t-test to compare means. We adhered solely to quantitative methods to objectively measure nurses' knowledge, attitudes, and practices concerning influenza vaccination. The respondent pool of 455 nurses was

chosen to be demographically representative of the broader nursing community.

## Results.

The demographic composition of the study's participants was characterized by a gender distribution of 94% female and 6% male, reflecting the typical gender distribution in the nursing profession. Participants exhibited a diverse range of work experience, with 59.7% having 11 or more years of experience, 21.6% possessing 6-10 years, 13.4% with 1-5 years, and 5.3% with less than one year of experience. This diverse experience range provides a comprehensive perspective on the attitudes towards flu vaccination across different career stages.

The data reveals that 56% of nurses have undergone formal education or training on flu vaccination, while 36.6% have not, and the remaining were uncertain. When assessing their own knowledge about flu vaccines, 30% considered it high, 65.7% medium, and 4.5% low. Notably, 61.7% of the nurses received the flu shot for the current season.

Among the nurses who did not receive the flu shot, the reasons were diverse: 14.7% cited personal health concerns, another 14.7% mentioned time constraints, 12.7% had been infected before vaccination, and 11.8% had safety concerns. Only 2% lacked information about flu vaccines, while 31.4% provided other reasons, such as beliefs about their immunity and perceptions of vaccine necessity. Further exploration into non-vaccination reasons showed a belief in natural immunity by 9.9% of the respondents, a perception that the flu is not a serious illness by 13%, and time constraints for another 13%.

A significant 83.8% of nurses expressed confidence in the vaccine's effectiveness, though with varying degrees of certainty.

In terms of recommending the flu shot to colleagues, 48.9% consistently advised it, 36.8% rarely did, and 14.3% never did. The reasons for not recommending included doubts about vaccine effectiveness (6.8%), safety concerns (16.5%), time constraints (13.6%), and viewing vaccination as a non-priority (19.4%).

A majority (59.7%) of nurses deemed flu shots important for healthcare workers, with 9% opposing flu vaccination. Concerns about vaccine side effects were reported by 18.8% (Figure 1).

Regarding mandatory flu vaccination for medical staff, 50% supported voluntary vaccination, 24.6% supported mandatory policies, 13.4% were neutral, and 11.9% saw it as a violation of human rights. Among opponents of mandatory vaccination, a notable 32% have received the flu vaccine during the current season, suggesting that opposition may not necessarily correlate with personal vaccination behavior.

Further disaggregating the data, we found that among those who have not been vaccinated against the flu this season, a mere 12.1% are against flu vaccination. Interestingly, 12% of the non-vaccinated nurses welcome the idea of making the flu vaccine mandatory for medical personnel, and 18% maintain a neutral stance. A significant 58% of the nurses who have not been vaccinated this season possess more than 11 years of work experience.

Geographical trends also emerged, with 60% of those who did not receive a flu vaccine this season coming from the Samegrelo-Zemo Svaneti region, one of the 11 regions represented in the study.

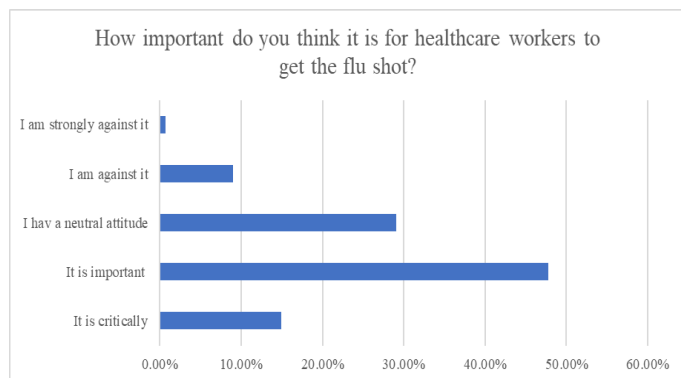


Figure 1. Attitudes Towards Flu Vaccination for Healthcare Workers.

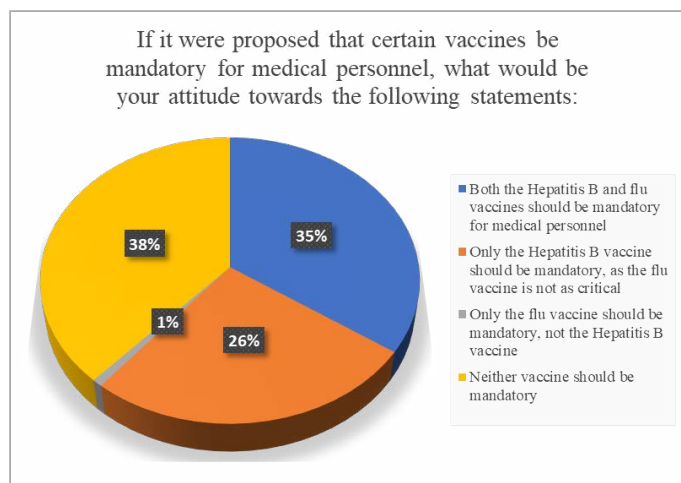


Figure 2. Nurses' Attitudes Towards Mandatory Vaccination for Medical Personnel.

When considering mandatory vaccinations more broadly, including the hepatitis B vaccine, opposition to mandatory vaccination decreased to 38.3%. A total of 34.6% supported mandatory hepatitis B and flu vaccines for medical staff, while 26.3% supported mandatory hepatitis B vaccination only (Figure 2).

Among those neutral towards flu vaccines, a significant 82% supported mandatory hepatitis B vaccination. Opposition to mandatory vaccination correlated with work experience: 24% with up to 5 years, 21% with 6-10 years, and 54% with over 11 years of experience were opposed. Only 3% of the opponents were well-informed about flu vaccines, although 43% believed in its effectiveness to a certain degree. These findings, with their statistical significance marked by a p-value of 0.05, provide insightful correlations within the nursing community regarding flu vaccination attitudes and practices.

## Discussion.

Our study's exploration of nurses' attitudes towards influenza vaccination has revealed that a considerable number of nurses cite personal health concerns, particularly allergies, as a rationale for vaccine avoidance. Yet, when placed in context, the apprehension about potential side effects such as severe allergic reactions or anaphylaxis associated with influenza vaccines is not proportionate to the actual risk. The incidence

of such severe allergic reactions is exceedingly rare, at about 1 per million vaccines administered, demonstrating the vaccines' high safety profile, and underscoring that contraindications are usually confined to those with a history of severe allergic reactions to vaccine components or prior doses [18-21].

Moreover, the historical concern surrounding influenza vaccination and Guillain-Barré syndrome (GBS) needs to be contextualized against current epidemiological data. While GBS has been a point of discussion, the risk associated with influenza vaccination is documented to be extremely low, at fewer than 1 or 2 cases per million vaccinations [22]. Importantly, this risk is significantly less than the incidence of GBS following influenza infection, suggesting that vaccination poses a lower risk than the disease itself. This evidence should serve to alleviate fears, as it underlines that the fear of GBS from vaccination, while understandable, is not aligned with the evidence of risk [23].

Adding further reassurance is the data from the National Center for Disease Control and Public Health of Georgia, which records no adverse events involving medical personnel over the last decade [24]. This absence of reported adverse events among medical professionals from the influenza vaccine contributes to the narrative of vaccine safety and should be a key message in addressing the concerns prevalent within the medical community.

Recognizing the gap between perceived and actual vaccine risks, it is clear that there is a pressing need for enhanced educational and communication strategies. These should aim to bridge this divide by providing continuous education and transparent information, thereby aligning the nursing community's understanding with the realities of influenza vaccine risks and benefits.

Furthermore, addressing educational needs becomes particularly pertinent when considering the uneven landscape of vaccine acceptance across regions, as evidenced by our findings. The study uncovered significant regional differences in influenza vaccination rates, with 60% of those unvaccinated hailing from Samegrelo-Zemo Svaneti. According to the Center for Disease Control's data from 2022, the region reported a 77% coverage for the MMR (measles, mumps, and rubella) vaccine, which is lower than the national average except for Tbilisi and the Kartli region. This discrepancy may signal specific regional factors at play in vaccine reluctance. While the precise causes of these regional variances were not explored in this study, the statistics underscore the importance of conducting further research into the public health initiatives and local beliefs that might influence vaccination attitudes in Samegrelo-Zemo Svaneti.

The juxtaposition of perceived risk with the empirical evidence of vaccine safety from both global and local data sources highlights a disconnect that must be addressed. The nursing community's concerns, although not evidence-based, are real and must be met with continuous education and transparent communication to realign perceptions with the reality of the risks, which are minimal compared to the benefits of vaccination.

Our study's findings regarding mandatory vaccination policies present a complex picture. While 50% of nurses endorse

voluntary vaccination, a sizeable minority, 24.6%, advocate for mandatory policies. The fact that 32% of nurses who oppose mandatory vaccination nonetheless chose to be vaccinated illustrates a nuanced stance that values personal autonomy while acknowledging the importance of the vaccine.

The discussion of mandatory vaccination policy becomes even more intricate when including vaccines such as the hepatitis B vaccine, where opposition lessens. This may suggest a hierarchy of vaccine importance or different levels of trust and familiarity with various vaccines. Notably, a majority of those neutral towards the flu vaccine support mandatory hepatitis B vaccination, indicating variable attitudes toward specific vaccines, likely influenced by a mix of personal beliefs, knowledge, and societal narratives.

In summary, our findings advocate for the dissemination of information that accurately conveys the low risk of serious adverse events and the relative safety of influenza vaccines to mitigate nurses' concerns. Ensuring that healthcare professionals are well-informed may lead to increased vaccine uptake, enhancing the health protection of both nurses and the patients they serve.

### Conclusion.

The findings of our study provide a comprehensive overview of the current landscape of influenza vaccination among nurses in Georgia, revealing a complex interplay of personal health beliefs, perceived risks, and professional responsibilities. Despite the documented safety of influenza vaccines and the rare incidence of severe side effects, there remains a notable degree of vaccine hesitancy within the nursing community, largely attributable to misconceptions and a lack of awareness about the true risks associated with vaccination.

The study highlights the critical role of targeted educational interventions in addressing these gaps. By disseminating evidence-based information and fostering transparent communication, healthcare authorities can recalibrate the perceived risks of vaccination among nurses, aligning them more closely with the empirically low risks. Educational efforts should be particularly mindful of addressing specific concerns such as allergies and should be customized to reflect regional variations in vaccine acceptance.

Our research also sheds light on the attitudes towards mandatory vaccination policies, revealing a spectrum of views that range from support to opposition. The nuanced perspectives observed, including among those who are against mandatory policies but still choose to vaccinate, underline the importance of respecting personal autonomy while advocating for the collective benefits of vaccination.

As the world continues to navigate the challenges posed by infectious diseases, the role of nurses as front-line healthcare providers—and as public health advocates—cannot be overstated. It is imperative that they are supported with factual knowledge to make informed decisions about vaccinations, not only for their safety but for the safety of the patients they serve.

In conclusion, this study calls for ongoing efforts to enhance the understanding of vaccine safety among nurses, promote the benefits of influenza vaccination, and ultimately, improve vaccination rates. Such initiatives will be integral to

strengthening the public health infrastructure and ensuring a robust response to influenza and other vaccine-preventable diseases.

### Conflict of Interest.

The authors declared that there is no conflict of interest.

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**Осведомленность и отношение медсестер к вакцинации от гриппа: Исследование в Грузии**

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**РЕЗЮМЕ**

**Цель исследования:** Целью данного исследования было изучение осведомленности и отношения медсестёр в Грузии к вакцинации от гриппа, особенно в свете введённой обязательной политики вакцинации для медицинского персонала.

**Материалы и методы:** Было проведено поперечное исследование с участием 455 медсестёр 5-го уровня, выбранных из числа 19000 зарегистрированных медсестёр в Грузии. Участники заполнили анкету из 16 вопросов смешанного формата, оценивающую демографическую информацию, знания об обязательной вакцинации от гриппа и отношение к вакцинации. Для анализа данных использовались количественные методы с применением

программы SPSS, сосредоточив внимание на таких статистических показателях, как среднее значение, относительные частоты, стандартное отклонение и критерий хи-квадрат.

**Результаты:** Исследование показало, что 56% медсестёр прошли обучение по вакцинации от гриппа, но значительная часть (36.6%) этого не делала, что привело к различным уровням самооценки знаний. Более 61% медсестёр были привиты в текущем сезоне. Причины отказа от прививки включали личные проблемы со здоровьем (14.7%), нехватку времени (14.7%) и страх побочных эффектов (16.5%). Несмотря на эти опасения, 83.8% верили в эффективность вакцины. Что касается обязательной вакцинации, 50% поддерживали добровольную вакцинацию, в то время как 24.6% выступали за обязательные политики. В исследовании также отмечены региональные различия в охвате вакцинацией и установлено, что значительная часть тех, кто выступает против обязательной вакцинации, тем не менее была привита.

**Выводы:** Исследование подчёркивает необходимость улучшения образовательных инициатив для коррекции заблуждений о рисках вакцинации среди медсестёр. Несмотря на опасения по поводу побочных явлений, реальный риск, связанный с вакцинацией от гриппа, низок. Исследование выступает за усиление коммуникационных стратегий с целью сокращения разрыва между воспринимаемыми и реальными рисками и увеличения охвата вакцинацией медсестёр от гриппа.

**Ключевые слова:** Вакцинация от гриппа, Медсестры, Колебания в отношении вакцинации, Обязательная вакцинация, Здравоохранение

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ექთნების ცნობიერების და დამოკიდებულების კვლევა გრიპის საწინააღმდეგო ვაქცინაციის მიმართ საქართველოში

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კვლევის მიზანი: კვლევა მიზნად ისახავდა საქართველოში ექთნების დამოკიდებულებისა და ინფორმირებულობის კვლევას გრიპის საწინააღმდეგო ვაქცინაციის მიმართ, განსაკუთრებით სამედიცინო პერსონალისთვის დადგენილი სავალდებულო ვაქცინაციის პოლიტიკის გათვალისწინებით.

მასალები და მეთოდები: ჯვარედინ-სექციური გვკვლევა ჩატარდა 455 მე-5 დონის ექთნის შერჩევით საქართველოში რეგისტრირებული 19000 ექთნის პოპულაციისგან. მონაწილეებმა შეავსეს 16 კითხვიანი კითხვარი, რომელიც აგროვებს დემოგრაფიულ ინფორმაციას და აფასებს გრიპის საწინააღმდეგო ვაქცინების შესახებ ინფორმირებულობას და სავალდებულო ვაქცინაციისადმი დამოკიდებულებებს.

მონაცემები დამუშავდა კომპიუტერული პროგრამის SPSS -ის მეშვეობით. დათვლილი იყო საშუალო არითმეტიკული, ფარდობითი სიხშირეები, სტანდარტული გადახრა, პირსონის კორელაციის კოეფიციენტი (r). განსხვავებების სტატისტიკური სანდოობა გამოითვლებოდა თანადობის კრიტერიუმით ( $\chi^2$ ), ხოლო საშუალოთა შორის განსხვავება სტიუდენტის განაწილებით (t).

შედეგები: კვლევამ აჩვენა, რომ ექთნების 56%-ს გავლილი ჰქონდა სწავლება გრიპის საწინააღმდეგო ვაქცინაციის შესახებ, მაგრამ მნიშვნელოვან ნაწილს (36.6%) არა, რამაც გამოიწვია ცოდნის სხვადასხვა დონე. 2023 წლის გრიპის სეზონისთვის რესპონდენტების 61%-ზე მეტი იყო აცრილი გრიპის საწინააღმდეგო ვაქცინით. გრიპის საწინააღმდეგო ვაქცინაციაზე უარის მიზეზები მოიცავდა პირადი ჯანმრთელობის პრობლემებს (14.7%), დროის დეფიციტს (14.7%) და არასასურველი გვერდითი მოვლენების შიშს (16.5%). მიუხედავად ამ დამოკიდებულებისა, 83.8% მიიჩნევს, რომ გრიპის საწინააღმდეგო ვაქცინა ეფექტურია. რაც შეეხება სავალდებულო ვაქცინაციას,

რესპონდენტთა 50% მიიჩნევს, რომ ვაქცინაცია უნდა იყოს ნებაყოფლობითი, ხოლო 24.6%-მა მხარი დაუჭირა სავალდებულო ვაქცინაციის პოლიტიკას. კვლევამ ასევე აღნიშნა რეგიონალური განსხვავებები ვაქცინით მოცვაში და დაადგინა, რომ სავალდებულო ვაქცინაციის მოწინააღმდეგეების მნიშვნელოვანი ნაწილი მაინც იყო ვაქცინირებული.

დასკვნები: კვლევა ხაზს უსვამს გაუმჯობესებული საგანმანათლებლო ინიციატივების აუცილებლობას ექთანთა შორის ვაქცინის რისკების შესახებ მცდარი წარმოდგენების გამოსასწორებლად. გვერდით მოვლენებთან ასოცირებული წუხილების მიუხედავად, გრიპის ვაქცინაციასთან დაკავშირებული რეალური რისკი დაბალია. კვლევა მხარს უჭერს გამლიერებულ საკომუნიკაციო სტრატეგიებს, რათა აღქმულ დარეალურ რისკებს შორის არსებული ინფორმაციული ასიმეტრია შემცირდეს და გაიზარდოს გრიპის საწინააღმდეგო ვაქცინაციით მოცვის მაჩვენებელი ექთნებს შორის.

საკვანძო სიტყვები: გრიპის საწინააღმდეგო ვაქცინაცია, ექთნები, სავალდებულო ვაქცინაცია, ჯანმრთელობითი განათლება.