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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

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

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

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

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

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

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

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

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

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

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

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

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

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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INDUCED ABORTION IN KAZAKHSTAN: WOMEN'S PERCEPTIONS AND EXPERIENCES BASED ON CROSS-SECTIONAL STUDY

Blushinova A.N[1], Orazalina A.S[1], Shalgumbayeva G.M[1]*.

[1]*Semey Medical University», Semey city, Kazakhstan.*

Abstract.

Objective: To assess the knowledge, attitudes, and practice regarding induced abortion among women of Kazakhstan. **Methods:** This cross-sectional study included 240 women from different regions of Kazakhstan from March to August, 2023. We used convenience sampling for this study. The questionnaire was developed independently in accordance with international findings and experience and underwent validation. SPSS version 20.0 was used for data analysis. Quantitative and qualitative variables are presented as frequencies/ percentages. Statistical analysis was conducted using a logistic regression model with statistical significance defined as $p < 0.05$. **Results:** In this study, the majority of the survey participants (74.6%) were familiar with abortion methods. Two-thirds (61.7%) of women had a medium level of knowledge. Only 66 (27.5%) respondents had positive attitudes toward induced abortion. The general practice of abortion among half of the study population was revealed to be medium (49.3%). A total of 67 participants (27.9%) reported a history of abortion. Factors associated with abortion history included residence in Southern [AOR=0.786], Eastern [AOR=0.635], and Central/Northern Kazakhstan [AOR=0.287], as well as having one to two [AOR=1.414], three to four [AOR=10.16], or five or more pregnancies [AOR=9.911]. **Conclusions:** Most women had moderate knowledge of abortion, with limited positive attitudes. A history of abortion was linked to regional and reproductive factors, highlighting the need for targeted educational and policy interventions.

Key words. Induced abortion, knowledge, attitude, practice, Kazakhstan, reproductive health.

Introduction.

Nearly 205 million pregnancies occur worldwide each year. More than a third of them are unintended, and about one-fifth end in induced abortion. Most abortions result from unplanned pregnancies [1]. Pregnancy can be intentionally terminated in several ways. The choice of method often depends on the gestational age of the embryo or fetus, which increases in size as the pregnancy progresses. The selection of a particular procedure may also be influenced by legality, availability in the region, or the preferences of the physician or patient [2]. A legal abortion, such as a medical abortion, can be performed if the pregnancy threatens the woman's life, while unsafe abortions typically occur where abortion is prohibited [3].

An unsafe abortion is defined by the WHO as a procedure for terminating an unwanted pregnancy that is carried out by individuals lacking the necessary skills, in an environment that does not meet minimal medical standards, or both [4]. In Kazakhstan, an abortion may be justified if a pregnancy results from rape or incest, if the life of the woman or fetus is at risk, if the fetus has severe abnormalities, if the woman has physical or mental disabilities, or if a minor is physically or psychologically unprepared for raising a child. [5]. Unwanted pregnancies and unsafe abortions are often overlooked reproductive health issues in developing countries, posing serious health risks to women of reproductive age such as hemorrhage, infection, uterine perforation, infertility, and even maternal death. [6].

Access to safe abortion is usually limited not only by law but also by other barriers such as social, religious, and cultural obstacles and a lack of awareness. These factors contribute to delays in seeking an abortion beyond the legally established timeframe. Consequently, when faced with an unwanted pregnancy, women resort to self-administered abortions or seek out providers, regardless of the risks. Unsafe abortions currently represent a critical health and human rights issue [7].

Kazakhstan has adopted a law on induced abortion and a list of medical and social indications, as well as contraindications for artificial abortion (Order of the Minister of Healthcare of the Republic of Kazakhstan dated October 9, 2020). According to the rules, induced abortion is permitted up to 63 days of gestation if there are medical or social indications, based on the results of analyses and conclusions of the Medical Advisory Committee (MAC). Between 63 days and 12 weeks, a referral for induced abortion is given through the Hospitalization Bureau Portal; an extract from the record of the outpatient containing the results of analyses along with the MAC's conclusion is provided, if there are medical or social indications. When the pregnancy term is be-tween 12 and 22 weeks, a referral for induced abortion is given through the Hospitalization Bureau Portal, based on the conclusion of the MAC and an excerpt from the outpatient card containing the test results if there are medical or social indications [https://adilet.zan.kz/rus/docs/V2000021412].

Kazakhstan's abortion laws permit the procedure upon request up to 12 weeks of pregnancy and under specific circumstances beyond that period. This aligns with international standards, such as those recommended by the World Health Organization (WHO), which advocates for abortion availability upon request during the first trimester and under certain conditions thereafter [https://abortion-policies.srhr.org/country/kazakhstan/?utm_source=chatgpt.com].

In comparison, countries like the United Kingdom and the United States allow abortions up to 24 weeks and 20 weeks, respectively, without specific conditions, reflecting a more liberal approach. This indicates that while Kazakhstan's policies are consistent with WHO guidelines, they are more restrictive compared to some Western nations.

Recent policy debates in Kazakhstan have focused on enhancing women's rights and safety, including measures to protect against domestic violence. However, these discussions have not yet led to significant changes in abortion legislation. Kazakhstan's abortion laws are in line with international standards but are more restrictive than those of some Western countries. Ongoing policy debates continue to address women's rights, though they have not yet resulted in changes to abortion laws.

Kazakhstan is among the 10 countries in which the maternal mortality rate decreased between 2000 and 2020 according to the WHO 2021 report. Unsafe abortion accounts for a significant proportion of maternal deaths. It is also one of the top reasons that women seek hospital admission in Kazakhstan. Although Kazakhstan has revised its abortion laws in recent years, unsafe and illegal abortions remain a significant public health issue. Despite legal access, barriers such as stigma, lack of awareness, financial constraints, and limited availability of services in rural areas contribute to the continued prevalence of unsafe procedures, making them a leading cause of maternal mortality. According to WHO data, the abortion rate (model-estimated) in Kazakhstan is 47 (95% CI: 26-86) [8].

The knowledge and practice of unsafe abortion are practically important because of the high rate of unwanted and teenage pregnancies

and soaring rates of sexually transmitted infections and HIV/AIDS. Different studies, however, show that the knowledge and practice in relation to safe abortion are limited among women [1-2]. Complications arising from illegal abortion are among the leading causes of death for women in Kazakhstan [9].

The main aim of this study was to assess knowledge, attitudes, and practice regarding induced abortion among women in Kazakhstan.

Materials and Methods.

Study area, design, and period:

Kazakhstan, officially known as the Republic of Kazakhstan, is largely situated in Central Asia, with a small part extending into Eastern Europe. It ranks as the world's ninth-largest country by land area and has a population of 20 million, 10 249 954 of whom are women. With fewer than six people per square kilometer, it has one of the lowest population densities globally.

This cross-sectional study was conducted to assess the knowledge, attitudes, and practice regarding induced abortion among women in Kazakhstan. This study was carried out between March and August, 2023, in different regions of Kazakhstan.

Sample size:

We enrolled 240 participants within 6 months using convenience sampling, through mass invitations of people to take a survey through social networks. We used convenience sampling for this study due to its feasibility and practicality in reaching participants from different regions of Kazakhstan within a limited timeframe. Given the nature of the research, convenience sampling allowed us to gather a diverse sample of women, which is crucial for understanding the variation in knowledge, attitudes, and practices related to induced abortion across different regions. Although this sampling method has limitations in terms of generalizability, it was the most appropriate approach for our study given the available resources and the scope of the research. Inclusion criteria were: voluntary consent to participate in the study, age over 18 years, citizen of Kazakhstan. Exclusion criteria: refusal to participate in the study, age under 18 years, participants with severe chronic illness or cognitive impairment, non-citizens of Kazakhstan, individuals who are currently pregnant or breastfeeding, individuals who have participated in similar studies within the last six months. Participants were primarily recruited through online surveys, which provided a convenient and efficient method for reaching a wide range of women across different regions of Kazakhstan. In areas where internet access was limited or participants preferred a more traditional approach, paper-based questionnaires were used. This hybrid method allowed us to include a diverse sample, ensuring representation from various demographic and regional groups.

We believe this approach provided a comprehensive and practical solution for our research goals, even though it does not allow for full generalizability across the broader population. The combination of online and paper-based methods ensured a diverse representation of participants, aligning with the specific aims of our study.

Study variables:

The dependent variables were knowledge about induced abortion (correct and incorrect), attitude (positive and negative), and practice (positive and negative). The independent variables included age, region of living, marital status, education, occupation, monthly income, number of pregnancies, and number of births.

Data collection procedures and materials:

The questionnaire was first developed in the English language by studying many international investigations [1,10-13]. It was then translated to Kazakh and Russian, and then back translated to English and compared with the initial version. The questionnaire was validated through a pilot test with a group of 15 randomly selected participants who were interviewed to confirm the survey's reliability and appropriateness. Following the pilot test, minor adjustments were made, and the final re-vised version of the questionnaire was then used for the current study.

The questionnaire consisted of three domains: knowledge, attitudes, and practices regarding induced abortion.

Knowledge was assessed using 7 multiple-choice questions. Each correct answer was scored as 1 point, while incorrect answers were scored as 0. The maximum possible score was 7. The overall level of knowledge was categorized as high (>75% of the total score), medium (>50%–75%), or low (≤50%).

Attitudes were evaluated with 5 multiple-choice questions. Each favorable (positive) answer was scored as 1 point, while unfavorable (negative) answers were scored as 0. The maximum possible score was 5. The overall attitude was classified as favorable (>75% of the total score), medium (>50%–75%), or unfavorable (≤50%).

Practices were assessed with 7 multiple-choice questions. Each positive practice was given 1 point, and each negative practice was scored as 0. The maximum possible score was 7. The overall level of practice was categorized as high (>75% of the total score), medium (>50%–75%), or low (≤50%).

We used Cronbach's alpha to assess the internal consistency and reliability of the instrument. A value greater than 0.7 was considered acceptable for all subscales, confirming that the items within each domain of the questionnaire consistently measured the intended construct.

The questionnaire was transformed into its web-based counterparts using standard HTML language. The URL of the web-based questionnaire was delivered to the women via social networks. Completed questionnaires were automatically collected through the online platform. In addition to Google Forms, paper surveys and phone interviews were used in areas with limited internet access, ensuring broader participation. The questionnaire was transformed into its web-based counterparts using standard HTML language. The URL of the web-based questionnaire was delivered to the women using social networks. We then received all the completed interactive web-based questionnaires with personalized feedback. In addition to Google Forms, paper surveys and phone interviews were alternatively used to collect data, to ensure a broad range of participants. We used Cronbach's alpha to assess the internal consistency and reliability of the instrument. A value of Cronbach’s alpha greater than 0.7 was considered acceptable for the subscales, ensuring that the items within each do-main of the questionnaire were measuring the intended construct consistently.

Quantitative and qualitative variables are presented as frequencies/ percentages. In our study, a p-value < 0.05 was considered to indicate a statistically significant difference. The odds ratios (ORs) and 95% confidence intervals (CIs) were calculated. Multivariable logistic regression analyses were performed to identify factors associated with a history of abortion or the lack of such history. A logistic regression model was used to analyze the binary outcome variable, which indicated whether participants had a history of abortion (yes/no). The independent variables incorporated in the model and include: Region (Central/Northern, Eastern, Southern, Western); Age group (16-20, 21-30, 31-40, >40); Marital status (Married, Single, Divorced, Widow); Education level (Higher, Secondary, Uncompleted secondary); Occupation (Employee, Service sector, Tradesperson, Self-employed, Housewife/retired/unemployed); Income (Categorized in KZT ranges); Number of pregnancies (0, 1-2, 3-4, 5 or more); Number of births (0, 1-2, 3-4, 5 or more). Both unadjusted and adjusted odds ratios (ORs) were calculated for these variables. The final model was adjusted for significant confounders based on statistical criteria (p-values) and theoretical considerations. This model was chosen due to its appropriateness for examining the relationship between a binary dependent variable and multiple independent variables. Prior to

applying the model, we checked several key assumptions: (1) linearity of the log-odds, (2) independence of observations, and (3) the absence of multicollinearity.

To assess the assumption of linearity of the log-odds, we conducted the Box-Tidwell test. The results showed that the interaction terms between log-transformed predictors and their original values were not statistically significant ($p > 0.05$), confirming that the assumption of linearity was met. The assumption of independence of observations was evaluated based on the study design. As each participant provided responses independently, and no hierarchical or clustered data structure was present, the assumption of independence was considered met. To further evaluate multicollinearity, we computed the correlation matrix for key predictor variables. The correlation between "Number of pregnancies" and "Number of deliveries" was r=0.49, indicating a moderate association. However, this value remains below the commonly accepted threshold of 0.7, suggesting that the relationship between these variables does not introduce significant collinearity. These findings align with the Variance Inflation Factor (VIF) analysis, which yielded VIF=2.04 for both variables - well within the acceptable range (VIF < 5). All assumptions were met, ensuring the validity of the model's results.

To ensure a rigorous confounder selection process, we evaluated the percentage change in regression coefficients when removing each predictor from the model. The results indicated that removing age, number of pregnancies, or number of deliveries resulted in a 100% change in their respective coefficients, confirming their substantial influence on the model. Based on these findings, we retained all key predictors to maintain model stability and interpretability. Additionally, confounder selection was based on a combination of statistical ($p<0.05$) and theoretical criteria, ensuring that clinically relevant variables were not excluded solely due to non-significance.

We have addressed this concern by assessing model calibration through a comparison of mean predicted probabilities and observed outcomes across decile groups, confirming a reasonable fit. Additionally, the AUC-ROC value of 0.75 indicates acceptable discrimination, and VIF values below 5 confirm the absence of significant multicollinearity, ensuring that all key model assumptions were met.

Statistical analysis was performed using SPSS version 20.0 (IBM Ireland Product Distribution Limited, Ireland).

Results and Discussion.

The majority of respondents lived in the East Kazakhstan region (45.4%). The mean age of the participants was 32.4 (±9.51) years; the youngest was 18 years old, and the oldest was 73 years old. More than half of the participants were aged 21-30 (53.3%). The majority of the survey participants were married (63.7%). Approximately 70% of the study participants had a higher education level. A third of the respondents (31,3%) were housewives/retired/unemployed. According to the Bureau of National Statistics, the estimated median wage for 2023 was KZT 393 605 (USD 856.24). The economic status of the majority of the participants' families was good (39.6%) (Table 1).

Table 1. *Sociodemographic characteristics of respondents.*

Characteristics N=240	**Frequency**	**Percent (%)**
Region		
Central, Northern	54	22.5
Eastern	109	45.4
Southern	51	21.3
Western	26	10.8
Age group (years)		
16-20	12	5.0
21-30	128	53.3
31-40	62	25.8
>40	38	15.8
Marital status		
Married	153	63.7
Single	55	22.9
Divorced	29	12.1
Widow	3	1.3
Education		
Higher	159	66.3
Secondary	74	30.8
Uncompleted secondary	7	2.9
Occupation		
Employee	66	27.5
Service sector	41	17.1
Tradesperson	30	12.5
Self-employed	28	11.7
Housewife/retired/unemployed	75	31.3
***Income (KZT)**		
50 000-70 000	2	0.8
70 000-100 000	8	3.3
100 000-150 000	19	7.9
150 000-200 000	49	20.4
200 000-300 000	67	27.9
>300 000	95	39.6
Number of pregnancies		
0	55	22.9
1-2	99	41.3
3-4	67	27.9
5 or more	19	7.9
Number of births		
0	0	0
1-2	113	47.1
3-4	65	27,1
5 or more	7	2.9
The official exchange rate at the time of writing is USD 1 = KZT 459.69		

After calculating the scores for the seven questions in the section on knowledge about induced abortion, the scale was divided into three levels: high, medium, and low. Out of participants, approximately two-thirds (61.7%) of women were evaluated as having a medium level of knowledge. Only two participants were rated as having high knowledge (accounting for 0.8%), and the rest were rated as having low knowledge (37.5%). The majority of the survey participants (74.6%) responded that they were familiar with abortion 201 methods. However, only approximately half of the respondents (53.3%) correctly indicated the place for terminating a pregnancy. The majority of the women (61.3%) gave correct answers for the question on who performs safe abortions. The majority of the participants (77.9%) correctly defined the favorable time to perform induced abortion. Only one-third of the interviewees (37.1%) correctly answered the question about the adoption of the induced abortion law in Kazakhstan. Nearly all the participants (94.6%) thought that illegal abortions were considered a serious problem in Kazakhstan. The majority of the survey participants (62.1%) knew of possible complications after an illegal abortion (Table 2).

A total of five questions were prepared to assess the overall attitudes of the respondents toward induced abortion. A total of five questions were prepared to assess the overall attitudes of the respondents toward induced abortion. The majority of the study participants (65.8%) had a low level of attitude, while 27.1% demonstrated a medium level, and only 7.1% showed a high level (Table 3). One-third of the participants

Table 2. *Knowledge of respondents regarding abortion.*

Variable	Frequency (n=240)	Percentage (%)
General knowledge		
Low	90	37.5
Medium	148	61.7
High	2	0.8
Do you know about induced abortion?		
	179	74.6
Incorrect	61	25.4
Place for terminating pregnancy		
Correct	128	53.3
Incorrect	112	46.7
Do you know who performs safe abortions?		
Correct	147	61.3
Incorrect	93	38,8
When is the preferable time to perform abortions?		
Correct	187	77.9
Incorrect	53	22.1
Kazakhstan has adopted a law on abortion		
Correct	89	37.1
Incorrect	151	62.9
Today, illegal abortions are considered a serious problem in Kazakhstan		
Correct	13	5.4
Incorrect	227	94.6
Do you know about the possible complications after an illegal abortion?		
Correct	149	62.1
Incorrect	91	37.9

Table 3. *Attitudes of respondents toward abortion.*

Variable	Frequency (n=240)	Percentage (%)
General attitude		
Low	158	65.8
Medium	65	27.1
High	17	7.1
What do you think about safe abortion?		
Positive	66	27.5
Negative	174	72.5
Do you believe that safe abortions are necessary?		
Positive	129	53.8
Negative	111	46.3
Safe abortion is reliable		
Positive	134	55.8
Negative	106	44.2
Safe abortion is unnecessary		
Positive	51	21.3
Negative	189	78.8
Suppose you had an unwanted pregnancy; what would you do?		
Positive	77	32.1
Negative	163	67.9

(32.1%) expressed a favorable attitude toward induced abortion when faced with an unwanted pregnancy, while the majority did not support abortion under such circumstances (Table 3). Induced abortion was considered a harmful practice by 43 (17.9%) respondents, while 66 (27.5%) expressed a positive attitude toward it. Forty women (16.7%) regarded it as a sin against God, 25 (10.4%) considered it a crime, and the remaining 66 participants (27.5%) hesitated to answer.

Half of the respondents believed that induced abortions were necessary (53.8%) and reliable (55.8%). At the same time, the majority of the participants (78.8%) considered that induced abortion was not necessary to safeguard the mother's health. In the context of an unwanted pregnancy, only a few of them (32.1%) had positive attitudes (Table 3).

A total of seven questions were prepared to assess the overall practice of the respondents regarding abortion. Each correct/positive response was scored as 1 point, with a maximum possible score of 7. The general practice of abortion among nearly half of the study population was revealed to be medium (49.3%). Among the study participants,

67 (27.9%) had a history of abortion. Most of them (88.1%) had undergone an abortion in the first trimester of pregnancy. Nearly half had undergone induced abortion (49.3%). Slightly more than half (53.7%) reported that the reason for their abortion was health-related. Induced abortion was most often performed by a specialist (58.2%) and in an appropriate medical facility (58.2%).

Approximately 41.8% of the women reported minor problems following abortions, mainly temporary pain or emotional distress. Importantly, no major medical complications such as infertility, bleeding, painful intercourse or urination, or infections were observed among women undergoing induced abortion (Table 4).

Table 5 summarizes the main sociodemographic and reproductive factors associated with a history of abortion. In the fully adjusted model, region of residence and number of pregnancies showed statistically significant associations with a history of abortion (Table 5).

Compared to women in the Western region (reference), women living in the Central/Northern (OR 0.287, 95% CI: 0.106–0.779), Eastern (OR 0.635, 95% CI: 0.216–1.870), and Southern regions (OR 0.786, 95% CI: 0.276–2.242) had reduced odds of reporting a history of abortion. A higher number of pregnancies substantially increased the odds of abortion: women with 3–4 pregnancies had an OR of 10.16 (95% CI: 1.879–54.89), and those with 5 or more pregnancies had an OR of 9.911 (95% CI: 1.557–63.07).

Approximately one in four women will choose to terminate a pregnancy in their lifetime. Globally, there has been a decline in abortion rates worldwide. However, no change in the abortion rate was observed in the developing world [14]. In a study by Prof. Aliza Amiel (2024), it was found that Israeli Arab Christian and Muslim women with children who had hearing impairments often opted for prenatal invasive tests and, in some cases, considered pregnancy termination due to deafness. The study highlighted that women with non-genetic hearing loss were more likely to pursue these options. Christian women, in particular, chose more invasive prenatal tests and pregnancy terminations compared to their Muslim counterparts. The research also emphasized the importance of having Mus- lim genetic and medical personnel who are sensitive to religious views in order to provide genetic counseling and raise awareness of available treatment options to help parents make informed decisions [15,16].

One of the biggest countries in Central Asia is Kazakhstan, with a population of 20 159 707 [17]. Abortion is available in Kazakhstan on request during the first 12 weeks of pregnancy and, with permission, up to 22 weeks; the Government of Kazakhstan updated the national guidelines in 2019 [18].

The constant rate of abortions in low- and middle-income countries is largely attributable to poor access to knowledge, attitudes, and practice. Complications from unsafe abortions lead to maternal deaths and abortion-related health issues globally, putting significant pressure on limited healthcare resources and causing serious physical, psycho logical, and financial impacts on women [6]. Therefore, the important factors for preventing abortion include not only improving knowledge, attitudes, and practices among the population, especially reproductive women, but also addressing systemic factors such as accessibility of contraception, healthcare infrastructure, legislative reforms. Ensuring that contraception is easily accessible to women of all ages can significantly reduce the number of unintended pregnancies and, consequently, the need for abortion. The availability of adequate healthcare services, including trained professionals and appropriate medical facilities, is essential for providing reproductive healthcare, counselling, and safe abortion services when needed. There may also be a need for legislative reforms to align national policies with international standards, ensuring that women's reproductive rights are fully protected and that they have access to safe and legal healthcare options.

We could not find investigations relating to the study of KAP in Kazakhstan and other Post-Soviet countries. The findings from the 2011 strategic assessment in Kyrgyzstan, which highlighted the limited

Table 4. *Practice of respondents regarding abortion.*

Variable	Frequency (n=67)	Percentage (%)
General practice		
Low	26	38.8
Medium	33	49.3
High	8	11.9
Trimester of induced abortion		
Positive	59	88.1
Negative	8	11.9
Type of induced abortion		
Positive	33	49.3
Negative	34	50.7
The reason for the induced abortion		
Positive	36	53.7
Negative	31	46.3
Place for terminating pregnancy		
Positive	39	58.2
Negative	28	41.8
Who performed the induced abortion?		
Positive	39	58.2
Negative	28	41.8
Did you have problems after the abortion?		
No	39	58.2
Yes	28	41.8
Were there any complications after the abortion?		
No	67	100
Yes	0	0

Table 5. *Factors associated with history of abortion.*

Variable	Unadjusted OR	(95% CI)	p-value	Adjusted OR	(95% CI)	p-value
Region			0.009			0.027
Central, Northern	0.306	0.123-0.766		0.287	0.106-0.779	
Eastern	0.524	0.197-1.397		0.635	0.216-1.870	
Southern	0.955	0.367-2.486		0.786	0.276-2.242	
Western	1	Reference		1		
Age group (years)			0.151			
16-20	1	Reference				
21-30	0.156	0.018-1.339				
31-40	0.548	0.253-1.187				
>40	0.878	0.378-2.041				
Marital status			0.763			
Married	1	Reference				
Single	0.782	0.069-8.847				
Divorced	0.619	0.052-7.390				
Widow	1.053	0.085-13.08				
Education			0.142			
Higher	1	Reference				
Secondary	0.419	0.090-1.955				
Uncompleted secondary	0.722	0.150-3.476				
Occupation			0.094			
Employee	1.928	0.866-4.294				
Service sector	3.378	1.426-8.001				
Tradesperson	2.044	0.764-5.465				
Self-employed	2.259	0.837-6.099				
Housewife/retired/ unemployed	1	Reference				
***Income (KZT)**			0.861			
50 000-70 000	-	-				
70 000-100 000	1.106	0.208-5.874				
100 000-150 000	1.185	0.384-3.657				
150 000-200 000	1.327	0.607-2.901				
200 000-300 000	1.622	0.807-3.260				
>300 000	1	Reference				
Number of pregnancies			0.000			0.001
0	1	Reference		1		
1-2	2.692	0.954-7.601		1.414	0.289-6.905	
3-4	8.611	3.052-24.29		10.16	1.879-54.89	
5 or more	11.11	3.068-40.24		9,911	1.557-63.07	
Number of births			0.004			0.145
0	1	Reference		1		
1-2	4.304	1.578-11.74		2.209	0.453-10.77	
3-4	5.854	2.052-16.70		0.720	0.130-3.990	
5 or more	13.33	2.302-77.24		1.832	0.174-19.31	

access to safe abortion services for women in underserved areas, are highly relevant to our study on knowledge, attitudes, and practices regarding induced abortion in Kazakhstan. Similar to Kyrgyzstan, women in certain regions of Kazakhstan may face barriers in accessing safe abortion services, which could impact their knowledge and attitudes toward abortion. Our study provides insight into the level of awareness about abortion methods and attitudes in Kazakhstan, and emphasizes the need for targeted educational programs and policies, particularly in rural and underserved regions, similar to those recommended in Kyrgyzstan. Just as Kyrgyzstan emphasized the training of local healthcare workers to provide induced abortion, Kazakhstan could benefit from such initiatives to improve both access to services and the overall understanding of reproductive health [19]. Uzbekistan, like, Kazakhstan, has similar legislation regulating abortion, which is generally accepted by the public and is seen as striking a balanced approach [20]. This shared legislative framework may contribute to a more stable and regulated environment for abortion services, potentially leading to higher levels of awareness and a more standardized approach to abortion across both countries. Our study emphasizes the importance of ensuring that, despite similar legal structures, there is continued focus on improving public education and access to reproductive health services to further strengthen women's knowledge and attitudes towards abortion in Kazakhstan. Adera A. et al. investigated the KAP of women of reproductive age regarding induced abortion in Ethiopia and revealed that more than two-thirds of the women of reproductive age had a poor level of knowledge about induced abortion. Also, most of the studied participants showed unfavorable/negative attitudes toward induced abortion [21]. Another study [2] demonstrated that adolescents' knowledge improves with education; people who had graduated from high school gave 4.9 times more correct answers concerning knowledge.

In our study, the general knowledge of the participants was medium (61.7%). Nearly half of the participants (46.7) did not know the place for terminating a pregnancy.

Our study revealed that the majority of the interviewees (77.9) correctly defined the preferable time to perform an induced abortion and knew who performs safe abortions (61.3%), but only half of them (53.3%) knew the facility for abortion. Only one-third of the participants (37.1%) knew the legal status of induced abortion in Kazakhstan. Most of them (94.6%) supposed that illegal abortion was currently a problem for Kazakhstan. The majority of the survey participants (62.1%) gave correct answers for the possible complications after an illegal abortion.

This study showed that most of the studied participants (72.5%) showed unfavorable attitudes toward induced abortion, but 134 (55,8%) said that induced abortion was necessary to save the life of the mother, 46 (19,2%) said that it was necessary if pregnancy was due to rape, and 9 (3,8%) mentioned that it was important to avoid interrupting studies. In the case of an unwanted pregnancy, only one-third of the participants (32.1%) stated that they would have kept their pregnancy.

Half of the study participants (49.3%) had a medium level of general practice for induced abortion. According to this study's findings, among the respondents, 67 (27.9%) had a history of induced abortion. The most common place where the procedure was performed was a health center (39 (58.2%)). The majority of the procedures were performed by doctors (39 (58.2%)), and 59 (88.1%) respondents reported that their induced abortions were carried out when their pregnancies were up to 12 weeks. The main reason for induced abortion for 36 (53.7%) women was health problems (maternal indications). We defined as negative reasons many previous pregnancies, a short time since the previous pregnancy, disagreements with the husband, fear of parental and public criticism (fear of criticism directed at oneself), economic reasons, and not wanting to interrupt education. More than half of the survey participants (58.2%) with a history of abortion had problems after the procedure. After the abortion, none of the women experienced complications such as infertility, bleeding, painful sensations during sex and urination, or infections.

In our study, we defined the following factors as associated with a history of induced abortion: region of residence, age group, marital status, level of education, occupation, economic status of the family, number of pregnancies, and number of births. In the fully adjusted model, region of residence and number of pregnancies showed statistically significant associations with a history of abortion. Compared to women in the Western region (reference), women living in the Central/Northern (OR 0.287, 95% CI: 0.106–0.779), Eastern (OR 0.635, 95% CI: 0.216–1.870), and Southern regions (OR 0.786, 95% CI: 0.276–2.242) had reduced odds of having a history of abortion. By contrast, a higher number of pregnancies was strongly associated with increased odds of abortion: women with 3–4 pregnancies had an OR of 10.16 (95% CI: 1.879–54.89), and those with 5 or more pregnancies had an OR of 9.911 (95% CI: 1.557–63.07). There were no marked differences in the magnitudes of most of the associations between the simpler model and the fully adjusted model regarding age group, marital status, level of education, occupation, and economic status of family.

This investigation has some limitations. Firstly, it was a cross-sectional study, which limits the ability to draw conclusions about causality. Additionally, the study employed a voluntary convenience sampling method, which resulted in a limited sample size despite efforts to cover all regions of Kazakhstan. Future research could address these issues by using a larger, more representative sample and employing longitudinal study designs to better understand the dynamics of knowledge, attitudes, and practices over time. Furthermore, a randomized sampling approach would ensure more generalized results, enhancing the reliability of findings. Another limitation is the use of a newly developed questionnaire. Although it was designed based on international standards and underwent validation prior to implementation, further studies are needed to assess its reliability and applicability across different populations. This research was carried out as part of a doctoral dissertation, and we plan to conduct a larger, nationwide study in the future to address these limitations. However, it is the first study to include women from different regions of Kazakhstan. We used international experience to determine the knowledge, attitudes, and practice of women in Kazakhstan regarding induced abortion.

The findings of this study have important implications for healthcare policies, reproductive education, and awareness campaigns in Kazakhstan. Our results highlight the need for targeted interventions, particularly in underserved regions, to improve women's knowledge and attitudes towards induced abortion. These findings could inform the development of comprehensive educational programs aimed at raising awareness of induced abortion and reproductive health rights.

Additionally, there is a strong need for healthcare training programs that equip providers with the knowledge and skills to offer evidence-based, nonjudgmental counselling on abortion. Integrating abortion education into medical and nursing curricula could improve service delivery and reduce stigma among healthcare professionals.

Expanding community-based awareness campaigns and collaborating with NGOs (Non-Governmental Organizations) and digital health platforms can further help disseminate accurate information, particularly in rural areas. Telemedicine initiatives could also play a role in providing safe, confidential reproductive health counselling.

Policymakers should consider enhancing access to safe abortion services by addressing financial and logistical barriers, particularly for women in remote areas. Legal and regulatory frameworks should be strengthened to ensure that all women, regardless of socioeconomic background, can access the reproductive healthcare they need.

Ultimately, this study underscores the importance of evidence-based reproductive health policies that prioritize education, accessibility, and the reduction of stigma surrounding abortion.

Conclusion.

The findings of this study provide insight into women's knowledge, attitudes, and practices regarding induced abortion and help us to identify the most effective methods for educating women on this subject. These results will serve as a foundation for future research and will also support policymakers in sexual and reproductive health clinics, as well as religious and community leaders, in refining strategies and program policies to address underlying causes more effectively. Promoting health information and education on modern contraceptive methods is essential, and access to modern contraceptives should be ensured.

This study revealed that the majority of the respondents had a medium level of knowledge and the majority of the subjects had negative attitudes regarding induced abortion. Half of the study participants had a medium level of practice regarding induced abortion. Factors associated with a history of induced abortion were region of living and number of pregnancies.

Conflicts of interest.

The authors declare no conflicts of interest.

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ანოტაცია

მიზანი: ყაზახეთის ქალებში ხელოვნური აბორტის შესახებ ცოდნის, დამოკიდებულებისა და პრაქტიკის შეფასება. მეთოდები: ამ ტრანსვერსალურ კვლევაში მონაწილეობდა 240 ქალი ყაზახეთის სხვადასხვა რეგიონიდან, 2023 წლის მარტიდან აგვისტომდე. შერჩევა განხორციელდა მოსახერხებელი შერჩევის მეთოდით. კითხვარი შემუშავდა საერთაშორისო გამოცდილებისა და კვლევების საფუძველზე და ჩატარდა მისი ვალიდაცია. მონაცემთა ანალიზი განხორციელდა SPSS-ის 20.0 ვერსიით. რაოდენობრივი და თვისებრივი ცვლადები წარმოდგენილია სიხშირისა და პროცენტების სახით. სტატისტიკური ანალიზისთვის გამოყენებულ იქნა ლოგისტიკური რეგრესიის მოდელი;

სტატისტიკური მნიშვნელობა დადგენილი იყო p < 0,05-ზე. შედეგები: მონაწილეთა უმრავლესობა (74,6%) იცნობდა აბორტის მეთოდებს. ორი მესამედის (61,7%) ცოდნის დონე იყო საშუალო. მხოლოდ 66 (27,5%) რესპონდენტს ჰქონდა პოზიტიური დამოკიდებულება ხელოვნური აბორტის მიმართ. კვლევის ნახევარში პრაქტიკის დონე საშუალო აღმოჩნდა (49,3%). სულ 67 მონაწილემ (27,9%) მიუთითა აბორტის არსებობა ანამნეზში. აბორტის ისტორია ასოცირებული იყო საცხოვრებელ რეგიონთან (სამხრეთი [AOR=0,786], აღმოსავლეთი [AOR=0,635], ცენტრალური/ჩრდილოეთ ყაზახეთი [AOR=0,287]) და ორსულობის რაოდენობასთან: ერთი–ორი [AOR=1,414], სამი–ოთხი [AOR=10,16], ხუთი ან მეტი [AOR=9,911]. დასკვნები: ქალების უმეტესობას ჰქონდა აბორტის შესახებ საშუალო დონის ცოდნა და შეზღუდულად პოზიტიური დამოკიდებულება. აბორტის არსებობა ანამნეზში უკავშირდებოდა რეგიონულ და რეპროდუქციულ ფაქტორებს, რაც მიუთითებს მიზნობრივი საგანმანათლებლო და პოლიტიკის ინტერვენციების საჭიროებაზე.
საკვანძო სიტყვები: ხელოვნური აბორტი, ცოდნა, დამოკიდებულება, პრაქტიკა, ყაზახეთი, რეპროდუქციული ჯანმრთელობა.

Аннотация

Цель: Изучить уровень знаний, отношение и практику, связанные с искусственным абортом у женщин в Казахстане. **Методы:** В поперечное исследование были включены 240 женщин из разных регионов Казахстана в период с марта по август 2023 года. Отбор осуществлялся методом удобной выборки. Анкета была разработана с учётом международного опыта и научных данных и прошла процедуру валидации. Статистический анализ проводился в программе SPSS версии 20.0. Количественные и качественные показатели представлены в виде частот и процентов. Для оценки факторов риска применялась логистическая регрессия; статистически значимыми считались различия при p<0,05.

Результаты: Большинство участниц (74,6%) были осведомлены о методах аборта. У 61,7% женщин уровень знаний оказался средним. Положительное отношение к искусственному аборту продемонстрировали лишь 66 (27,5%) респонденток. У половины опрошенных уровень практики в отношении аборта был средним (49,3%). В общей сложности 67 женщин (27,9%) сообщили об аборте в анамнезе. Факторами, связанными с наличием аборта в анамнезе, являлись регион проживания (Южный [AOR=0,786], Восточный [AOR=0,635], Центральный/Северный Казахстан [AOR=0,287]) и количество беременностей: одна–две [AOR=1,414], три–четыре [AOR=10,16], пять и более [AOR=9,911]. **Заключение:** У большинства женщин выявлен средний уровень знаний об аборте при ограниченно позитивном отношении к нему. Наличие аборта в анамнезе ассоциировано с региональными и репродуктивными факторами, что подчёркивает необходимость разработки целевых образовательных программ и политических мер.

Ключевые слова: искусственный аборт, знания, отношение, практика, Казахстан, репродуктивное здоровье.