

# ASSESSMENT OF AWARENESS AND RISK FACTORS FOR CERVICAL CANCER AMONG YOUNG WOMEN IN ALMATY

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## ABSTRACT

**Relevance:** Currently, in the world, including Kazakhstan, the increasing number of new cervical cancer cases among women of reproductive age is a socio-demographic problem. The increase in cervical cancer incidence among young women, the high prevalence of human papillomavirus (HPV) infection among young sexually active women, the lack of screening programs for the early detection of cervical cancer in young women, the need to take urgent measures to increase awareness of young women about risk factors for cervical cancer and methods of prevention and determined the relevance of this study.

**The study aimed to** estimate the awareness, identify risk factors for cervical cancer; and assess the state of reproductive health of young women of Almaty by questioning.

**Methods:** This article presents the results of a survey of young women aged 18 to 32 living in Almaty. Participants received full information on the upcoming survey. The questionnaire collected information on socio-demographic data, awareness of cervical cancer prevention, and women's gynecological history. The questionnaire contained 30 questions in total and took 10 minutes to complete.

**Results:** Among young women in Almaty, low awareness of primary and secondary prevention of cervical cancer was revealed in all age groups. The most common risk factors for cervical cancer among young women in Almaty were an early onset of sexual activity, smoking, and hormonal contraceptive uptake.

**Conclusion:** The survey showed the problem of low awareness of girls about cervical cancer and the risk factors for developing cervical cancer. Based on these data, we can state the need for educational work on these issues among young people.

**Keywords:** cervical cancer; young women; risk factors.

**Introduction:** About 1800 new cases of cervical cancer and 600 deaths from this disease are registered in the Republic of Kazakhstan each year [1]. In recent years, the number of new cases of cervical cancer among young women has doubled.

About 85% of deaths from cervical cancer worldwide occur in underdeveloped or developing countries. The death rate from cervical cancer in low- and middle-income countries is 18 times higher than in richer countries [2].

Besides, in recent years, the number of new cervical cancer cases among women of reproductive age has increased. Awareness among young women about the factors of cervical cancer development and high awareness of the methods of its prevention will help eliminate this disease.

**Sexual behavior.** Male and female sexual behavior is the main risk factor for developing cervical cancer. The survey among female prisoners in 1960 first discovered the connection between cervical cancer development and prostitution. Cervical cancer prevalence in those women was 4-6 times higher than in the general population; 9% of prosti-

tuting female prisoners had a cytologically revealed carcinoma in situ. Later, the association of cervical cancer with the number of sexual partners and early onset of sexual activity was established [3].

Sexual activity potentially exposes a woman's body to HPV infection. Women who have had no sexual contacts rarely develop cervical cancer. In contrast, the early onset of sexual life increases the risk of developing cervical cancer because a young woman's cervical epithelium is especially vulnerable to infectious agents and, as a result, is more prone to squamous metaplasia [4].

At that, a woman can contract HIV even from a single sexual partner.

Women are also at higher risk of developing cervical cancer if their male partners have many sexual partners or if they have had female partners with cervical cancer [5].

Male sexual behavior is another important risk factor. Many studies emphasized the value of the "male factor" in developing cervical cancer. I.e., Franceschi & Vaccarella noted high mortality from cervical cancer in women whose partners had a job involving long trips [6]. Buck-

ley et al. studied women who had sexual intercourse only with their husbands and discovered that the risk of cervical neoplasia increases with the number of other sexual partners in their husbands [7].

**Smoking.** Smoking is a well-known risk factor for developing cancer. In a meta-analysis covering 11 studies published before 2012, Zeng et al. reported that passive smoking significantly increases the risk of developing cervical cancer [8]. A systematic review and meta-analysis by B. Su et al. included 14 studies with 384,995 participants conducted after March 2018 showed an association between smoking with an increased risk of cervical cancer [9].

Smoking women were also found to be at increased risk of developing squamous cell cervical cancer compared to never smoking. The risk of developing squamous cell cervical cancer increased with the number of cigarettes smoked per day but not with the duration of smoking [10].

Several mechanisms are thought to play an important role in cancer development. First, constant smoking can weaken immune function and thereby increase the risk of contracting HPV, which is a significant reason for cervical cancer [11]. Second, nicotine has been proven to promote tumor development [12].

**Hormonal contraceptives.** Taking oral contraceptives for a long time may increase the risk of cervical cancer. Taking combined oral contraceptives (COCs) can presumably promote carcinogenesis in the cervix and accelerate this process. Taking contraceptives for five years or more is associated with a higher risk of cervical cancer [13].

Gierisch et al. showed an increase in the risk of developing cervical cancer by 10% when taking COCs for less than five years, by 60% when taking COCs for 5-9 years, and a doubled risk when taking COCs for ten and more years [14]. However, the risk of cervical cancer decreased over time when women stopped taking oral contraceptives [15].

**Sexually-transmitted infections.** Chlamydia trachomatis is a sexually transmitted bacterium. Women with HPV and chlamydial infection have a higher risk of developing cervical cancer. Prolonged inflammation caused by chlamydia makes HPV infection difficult to clear, especially in recurrent chlamydial infections [16].

Herpes simplex virus type 2 (HSV-2) also correlates with a higher-than-usual incidence of cervical cancer [17].

**The study aimed to** estimate the awareness, identify risk factors for cervical cancer, and assess the state of reproductive health of young women of Almaty by questioning.

**Materials and Methods:** This article analyzes the intermediate results of a survey of young women living in Almaty. The study included women aged 18 to 31 who were sexually active and able to understand and complete the questionnaire. The girls had to answer each question together with the doctor or on their own.

The questionnaire was developed in three stages: 1) development of questions, 2) building a questionnaire, and 3) translation of the questionnaire into Kazakh and Russian. Before the survey, the content panel was asked to evaluate the validity of the questionnaire content in a two-stage evaluation. The questionnaire was approved by the Local Ethics Commission of "Kazakh Institute of Oncology and Radiology" JSC (KazIOR). The questionnaire was provided with an informed consent form and a cover letter explaining the study's purpose and confirming the respondents' anonymity and voluntary participation.

**Stage 1.** Before compiling the questionnaire, a literature search was conducted on studies on cervical cancer and its prevention. After a thorough review of the literature, the following three main areas of expertise were selected: 1) risk factors for cervical cancer, 2) knowledge about primary prevention, and 3) knowledge about secondary prevention. Demographics and information about the reproductive health of the interviewees were also included.

**Stage 2.** The final questionnaire contained 30 questions covering demographic data (1 question), lifestyle (4 questions), gynecological status (12 questions), general knowledge about cervical cancer (3 questions), knowledge of risk factors associated with cervical cancer (3 questions), knowledge about primary prevention of cervical cancer (5 questions), and knowledge about secondary prevention of cervical cancer (3 questions).

**Stage 3.** The questionnaires were translated into Russian and Kazakh to attract respondents of different ethnicities. The questioning was conducted from August to November 2021 at KazIOR and State Polyclinics No. 17 of Almaty. The respondents' data was coded and entered into a computer.

**Results:** A total of 228 women took part in the survey. The average age was 24.5 years. The socio-demographic characteristics of the participants are shown in Table 1.

**Table 1 – Socio-demographic characteristics of the study participants (n=228)**

Question	Answer	Frequency	%
Age	18-23	66	28.9
	24-28	102	44.7
	29-31	60	26.3
Marital status	Married	126	55.2
	Not married	102	44.7
Having children	Yes	103	45.1
	No	125	54.8

This survey touched upon the important topic of the gynecological status of women. Thus, 28.5% of women had a history of pelvic inflammatory disease, 53.9% had

painful menstruation, and 17.5% had irregular menstruation ( $p < 0.05$ ). See Table 2 for their gynecological anamnesis.

**Table 2 – Gynecological history of study participants (n=228)**

Question	Answer	Q-ty	%
The nature of menstruation	Irregular	40	17.5
	Regular	188	82.4
	Painful	123	53.9
	Non-painful	105	46.05
Presence of a pelvic inflammatory disease	Yes	65	28.5
	No	163	71.4
Presence of a non-inflammatory pelvic disease	Yes	46	20.1
	No	182	79.8

The assessment of risk factors for cervical cancer showed that only 24 (10.5%) respondents had bad habits in the form of smoking, and 12 (5.2%) took COCs.

*Knowledge about available preventive services.* 44.2% (101) of participants knew about the National Screening Program for Cervical Cancer. The awareness was much higher among women aged 24 to 31.

Regarding the HPV vaccination program, 40.7% (93) of the participants were aware of the vaccination, but only 33.3% (76) of the women would like to be vaccinated against HPV.

*Screening visit for cervical cancer.* The questionnaire also included questions to young women about their screening experience. 35.9% (82) of respondents were screened at least once. Those who never paid screening visits most often mentioned such barriers as embarrassment, fear of the test and the result, and lack of awareness about screening.

**Discussion:** This survey revealed limited general knowledge about the prevention of cervical cancer and also made it possible to assess the frequency of risk factors for cervical cancer in young women of Almaty. The most frequently mentioned risk factors for cervical cancer were early onset of sexual activity, smoking, and taking hormonal contraceptives. These responses correspond to published data evidence that sexual behavior is the most common risk factor for cervical cancer [18].

Despite the national screening program for cervical cancer, the study revealed very low awareness about primary and secondary prevention of cervical cancer and limited knowledge about this disease. This could indicate a lack of effective promotion of the program and insufficient public awareness about the role of screening in the prevention of cervical cancer, as well as the need for more frequent coverage of cervical cancer problems in the country.

The assessment revealed a very low awareness of the cervical cancer preventive services available in the country compared to European countries [19]. Those who knew about the program had many misconceptions about who was invited for screening and at what frequency.

The questioning established age as the most significant variable. At that, older women (24-31 years), i.e., those currently targeted by the screening program, were better informed.

Therefore, in expanding the national screening program to other age groups while preserving the recommended 4-year examination interval, the public shall be informed of the advantages of screening and the harms of frequent screening, such as overtreatment and increased psychological anxiety about screening. Clarification should also be given to healthcare professionals who tend to recommend frequent screening for women with normal risk levels.

**Conclusion:** This survey provides a better understanding that young women are vulnerable groups regarding knowledge about cervical cancer and attendance at screening events. The results showed the need to increase health literacy in young women and conduct a health promotion campaign to improve knowledge about cervical cancer risk factors and attendance at screening events.

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## АНДАТПА

### АЛМАТЫ ҚАЛАСЫНДАҒЫ ЖАС ӘЙЕЛДЕР АРАСЫНДА ЖАТЫР МОЙНЫ ОБЫРЫНЫҢ ҚАУІП ФАКТОРЛАРЫ МЕН ХАБАРДАРЛЫҒЫН БАҒАЛАУ

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**Өзектілігі:** Қазіргі уақытта әлемде, оның ішінде Қазақстанда әлеуметтік-демографиялық проблема болып табылатын репродуктивті жастағы әйелдер арасында жаңа жасөспірімдердің көбеюі байқалады. Жас әйелдер арасында жатыр мойны обырының аурушаңдығының артуы, жас жыныстық белсенді әйелдер арасында HPV инфекциясының жоғары таралуы, жас әйелдерде жатыр мойны обырын ерте анықтау бойынша скринингтік бағдарламалардың болмауы, ақпараттандыруды арттыру үшін шұғыл шаралар қабылдау қажеттілігі, жас әйелдер жатыр мойны обырының қауіп факторлары және алдын алу әдістері туралы және осы зерттеудің өзектілігін анықтады

**Зерттеудің мақсаты** – Алматы қаласындағы жас әйелдер арасында жатыр мойны обырының қауіп факторларын анықтау және хабардарлықты бағалау

**Әдістері:** Мақалада Алматы қаласындағы 18 бен 32 жас аралығындағы жас әйелдер арасында жүргізілген сауалнаманың аралық нәтижелерінің аналитикалық зерттеуі берілген. Қатысушылар алдағы сауалнама бойынша толық ақпарат алды. Сауалнама әлеуметтік-демографиялық деректер, жатыр мойны обырының алдын алу туралы хабардар болу және әйелдердің гинекологиялық тарихы туралы ақпарат жинады. Сауалнама барлығы 30 сұрақтан тұрды және толтыруға 10 минут уақыт берілді.

**Нәтижелері:** Алматы қаласындағы жас әйелдер арасында жатыр мойны обырының бастапқы және қайталама профилактикасы бойынша барлық жас топтарында хабардарлықтың төмендігі анықталды. Алматы қаласындағы жас әйелдер арасында жатыр мойны обырының қауіп факторларын бағалау кезінде жыныстық белсенділіктің ерте басталуы, темекі шегу және гормоналды контрацептивтерді қабылдау жиі кездеседі.

**Қорытынды:** Сауалнама қыздардың жатыр мойны обыры және жатыр мойны обырының даму қауіп факторлары туралы хабардарлығының төмендігі проблемасын көрсетті. Осы деректерге сүйене отырып, жастар арасында осы мәселелер бойынша тәрбие жұмысын жүргізу қажеттілігі туралы қорытынды жасауға болады.

**Түйінді сөздер:** жатыр мойны обыры, жас әйелдер, қауіп факторлары.

## АННОТАЦИЯ

**ОЦЕНКА ИНФОРМИРОВАННОСТИ И ФАКТОРОВ РИСКА РШМ СРЕДИ  
МОЛОДЫХ ЖЕНЩИН г. АЛМАТЫ**

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**Актуальность:** В настоящее время в мире, в том числе в Казахстане, отмечается увеличение числа новых случаев рака шейки матки (РШМ) среди женщин репродуктивного возраста, что является социально-демографической проблемой. Рост заболеваемости РШМ среди молодых женщин, высокая распространенность вируса папилломы человека (ВПЧ) среди молодых сексуально активных женщин, отсутствие скрининговых программ по раннему выявлению РШМ у молодых женщин, необходимость принятия неотложных мер по повышению информированности молодых женщин о факторах риска РШМ и методах профилактики и определили актуальность настоящего исследования.

**Цель исследования** – оценить информированность и выявить факторы риска РШМ, также оценить состояние репродуктивно-го здоровья молодых женщин г. Алматы методом анкетирования.

**Методы:** В статье представлено аналитическое исследование промежуточных результатов опроса молодых женщин г. Алматы в возрасте от 18 до 32 лет. Участницы получили полную информацию по предстоящему анкетированию. Анкета включала вопросы о социально-демографических показателях, осведомленности о профилактике РШМ и гинекологическом анамнезе женщины. Всего анкета содержала 30 вопросов, на её заполнение требовалось 10 мин.

**Результаты:** Выявлена низкая информированность о первичной и вторичной профилактике РШМ во всех возрастных группах молодых женщин г. Алматы. При оценке факторов риска РШМ среди молодых женщин г. Алматы методом анкетирования наиболее часто упоминались раннее начало половой жизни, курение и прием гормональных контрацептивов.

**Заключение:** Анкетирование показало низкую информированность девушек о РШМ и факторах риска развития РШМ. На основании этих данных можно сделать выводы о необходимости просветительской работы среди молодежи по данным вопросам.

**Ключевые слова:** рак шейки матки (РШМ), молодые женщины, факторы риска.

**Transparency of the study:** Authors take full responsibility for the content of this manuscript.

**Conflict of interest:** Authors declare no conflict of interest.

**Financing:** This study was funded by "Kazakh Institute of Oncology and Radiology" JSC within the Scientific-Technical Project no. BR11065390 (under the targeted financing by the Ministry of Healthcare of the Republic of Kazakhstan).

**Authors' input:** contribution to the study concept – Kaidarova D.R.; study design – Satanova A.R.; execution of the study – Kukubassov E.K., Bertleuov O.O., Bolatbekova R.O.; interpretation of the study – Sadykova T.T., Kaldybekov D.B.; preparation of the manuscript – Satanova A.R.

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