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Optimizing Visual Screening Cervical Cancer in the Republic of Tajikistan

Muhsinzoda N. A.

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State institution "Republican Oncology Research Center" Ministry of Health and Social Protection of the Population of the Republic of Tajikistan,

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KEYWORDS cervical cancer, cervical visual screening, screening, primary health care.	ABSTRACT: Introduction: The relevance of the problem of cervical cancer is due to the growing trend in the incidence of cervical cancer in the world, which dictates the need for active detection and treatment of this pathology in the early stages. In the Republic of Tajikistan, taking into account the level of incidence and prevalence, infrastructure and availability of resources, visual screening will be carried out, which is an effective method for identifying precancerous diseases and cervical cancer.				
	Objective: Assessment of the experience of using visual screening for cervical cancer, preparation of health care institutions of the Republic of Tajikistan and prospects for further expansion at the national level.				
	Methods: For this study, two experimental districts were selected - primary health care institutions (PHC) in Kushoniyon district and B. Gafurov district.				
	Results: Currently institutions in Bol specialized doctor examination of the 3986 women unde diagnosed with cer	y, this screening method is used in 16 l khtar and Khujand. To implement this s rs are involved. Over the 6 months of t e cervix and 12,991 underwent a colposcop erwent cytological examination of the cerv rvical cancer (3.9%).	PHC in Dushanbe, and regional level medical trategy, 32,391 employees of PHC and 2,017 his year, 179,922 women underwent a visual bic examination of the cervix. At the same time, ix, which amounted to 30.7%, 131 women were		
	Conclusions: The Tajikistan contribution favorable regulator	e positive experience of using visual scre utes to the expansion of this strategy at ry framework, human resources and techni	ening in two pilot districts of the Republic of the national level, where there is currently a cal equipment.		

1. Introduction

Urgency of the problem of cervical cancer (CC) is due to the fact that in 2020, 604 thousand new cases of cervical cancer were registered in the world and 342 thousand women died, and 85-90% of these deaths occur in countries with low- and middle-income levels [1, 2].

GLOBOCAN predicts that by 2050, the incidence of cervical cancer will increase by 50%, which dictates the need to actively identify and treat this pathology in the early stages [3].

According to the analysis of reporting forms 7 and 35, over the past 10 years, cervical cancer has taken 2nd place not only in the structure of oncological diseases of the female population, but also among the entire contingent of patients with malignant neoplasms in 2020 [4].

Incidence of cervical cancer for the study period 2010-2020, throughout the republic fluctuated between 4.7-8.7 per 100 thousand female population with periods of increase and decline [5].

In 2020, WHO adopted a global strategy for the elimination of CC and the "90-70-90" targets, according to which by 2030, 90% of girls should be vaccinated by the age of 15; 70% will undergo screening and 90% of patients will receive treatment and palliative care [6].

The process of carcinogenesis of cervical cancer lasts from three to 10 years. The main etiological factor is highly oncogenic types of papillomavirus infection, leading to varying degrees of cervical intraepithelial neoplasia (CIN) with progression to cancer. The choice www.jchr.org

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of CC screening method in each country depends on the incidence rate, prevalence of PVI, infrastructure and availability of resources [7].

There are three most common screening methods (visual, cytological, virological). Countries choose screening methods and strategies depending on the availability of resources. The optimal strategy must meet the main criteria: it must be accessible to the entire population, effective and economically acceptable.

A comparative economic analysis of 3 well-known screening methods showed that visual screening is an economically feasible and at the same time effective method for detecting precancerous diseases and cervical cancer. It requires an additional 10% investment from external sources for its implementation. Cytological and virology screening are currently not economically justified, but can be included in the complex of post-screening diagnostics of precancerous diseases and cervical cancer.

Tajikistan, being a European member of the World Health Organization, is included in the Global Strategy to eliminate cervical cancer and reduce the incidence of sexually transmitted diseases in the female population.

The highest incidence rates of cervical cancer in the republic were observed in 2013 (8.2 per 100 thousand women) and in 2016 (8.7 per 100 thousand women) [8].

In the Republic of Tajikistan, as part of achieving the goals of the Global Strategy for the elimination of CC until 2030, 90% of girls upon reaching the age of 15 will vaccinated against human papillovirus infection, while 70% of women will undergo screening and 90% of women who are diagnosed with CC will undergo diagnosis and receive treatment, including palliative care.

2. Objectives

Evaluation of experience with visual screening for cervical cancer, preparation of health care institutions of the Republic of Tajikistan and prospects for further expansion at the national level.

3. Methods

An analysis of the stages of implementation of visual screening for cervical cancer in the Republic of

Tajikistan was carried out, taking into account the results of using this method in two experimental districts - Kushoniyon of Khatlon region and B. Gafurov of Sughd region for the period 2016 to the present and the priorities of its use in Primary Health Care institutions (PHC).

Data on the conducted training courses "Visual screening of the cervix" are presented. As part of this study, for 6 months of this year, a visual examination of the cervix was carried out in 179 922 women and a colposcopic examination of the cervix in 12 991.

When processing the results obtained, the number of patients, percentage, and arithmetic mean presented quantitative variables, and qualitative variables were described by absolute and relative frequencies (percentages). Differences were considered statistically significant at p<0.05.

4. Results

Among the population of the Republic of Tajikistan, since 1992, the incidence rate of cervical cancer has fluctuated between 4.1 and 8.7 per 100 thousand population.

Currently, according to official statistics, the total number of patients with cervical cancer is 2192, of which only 252 people had cases of cervical cancer confirmed for the first time in the first 6 months of 2023. The same figure for the specified period in 2022 was 413 people, which is 161 more cases (Fig. 1).



Fig. 1. Dynamics of primary registration of cervical cancer incidence

The Ministry of Health and Social Protection of the Population, in collaboration with a number of development partners, since 2016, in two pilot districts -

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Kushoniyon of the Khatlon region and B. Gafurov of the Sughd region, carried out visual screening and prepared the healthcare sector for its expansion at the national level from 2021. According to the new recommendations and regulations, visual inspection is the responsibility of health network staff, and family doctors and secondary workers in city and district health centers, as well as in rural health centers, are responsible for reaching all women. During visual screening, the listed institutions, according to this algorithm (Fig. 2), conducted repeated visual examinations of healthy women every three years, while women with positive and suspicious results were sent to reproductive health centers for colposcopic examination.



Fig. 2. Algorithm for visual screening of cervical cancer, adopted by the healthcare system of the Republic of Tajikistan

In turn, the reproductive health centers of each city and region, in collaboration with cytological departments and oncology centers of the regions, conduct colposcopic, cytological and histological diagnostics to confirm cases of cervical dysplasia and cancer.

Treatment of cervical dysplasia and its dispensary monitoring is carried out at the level of the Republican Scientific Oncology Center.

Currently, this screening method is used in 16 primary health care institutions in Dushanbe, and regional level medical institutions in Bokhtar and Khujand. At the same time, staff from the network of PHC facilities in other cities and districts of the country are being trained for further implementation of screening.

The main goal of this plan is the mandatory use of the screening method in the activities of every employee of primary health care institutions, while all women of reproductive age and over 50 years of age must be included in the screening examination on a scheduled and free basis.

To implement this algorithm, 32391 employees of primary health care institutions and 2017 specialized doctors are involved (Table 1).

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	Number of trained	Provision per 10,000	Total number	
	nersonnel	inhabitants		
	personner	mabitants		
Screening of women				
Family doctors PHC	8	9.5/1.9	9560/1933	
Family PHC nurses	21	22.6/9.9	22831/9079	
All PHC staff	29	32.1	32391	
Conducting post-screening examinations				
Gynecologists	56	2.0	1975	
Cytologists, as well as those working	10		10	
in private medical institutions				
Gynecologic oncologist/histologist/sitol	22/6/4			
Total number of specialists	2017			

Table 1. Training process of visual cervical screening in the republic

Up to date, 56 obstetrician-gynecologists working in City Health Centers have taken part in the training course "Visual screening of the cervix." In the Khatlon region, this training covered 16 heads-managers, 60 obstetricians-gynecologists, midwives, and 42 family nurses (Table 2).

Table 2. Organization of the training course "Visual screening of the cervix" and equipment for colposcopic diagnosis

	Cervical examination room	Number of colposcopes	Trained specialists	Number of facilities supplied by electrosurgical units
Dushanbe	15	20	17	5
DRS	3	7	11	2
Khatlon region	9	12	11	4
Sughd region	10	18	32	4
GBAO	5	5	2	1
Total	42	62	73	16

Note: DRS - Districts of Republican Subordination,

GBAO - Gorno-Badakhshan Autonomous Region

The regulations on rooms for CC diseases have been developed by the working group and are under consideration.

These rooms will be equipped with modern equipment in accordance with specifications, including a colposcope and devices for the physiosurgical treatment of precancerous lesions of the cervix. At the level of primary health care institutions, there are 42 such rooms and 62 colposcopic devices, of which 10 are not working.

Over the 6 months of this year, 179 922 women underwent a visual examination of the cervix and 12 991 underwent a colposcopic examination of the cervix.

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At the same time, 3986 women underwent cytological examination of the cervix, which amounted to 30,7%, 131 women were diagnosed with cervical cancer (3,9%).

Currently, these women are under dispensary observation by specialists from the Republican Scientific Oncology Center.

Therefore, based on the results of using visual screening in two pilot districts of the republic, the Ministry of Health and Social Protection of the Population of the Republic of Tajikistan decided to expand the experience gained to the national level.

According to the action plan, the implementation of visual screening of cervical cancer at the national level is envisaged in 3 stages until 2030: stage 1 includes the period 2021-2024, stage 2 - 2025-2027 and stage 3 - 2027-2030.

Over the past 3 years, a number of national regulatory documents have been adopted to introduce vaccination against human papillovirus infection for adolescent girls in the age group of 10-14 years; implementation of visual screening throughout the country with a complex of post-screening diagnostics for recovery from CIN and detection of cervical cancer in the early stages.

For the purpose of early detection, prevention and treatment of precancerous diseases of the cervix, as well as the introduction of visual screening for cervical cancer at the national level, the Ministry of Health and Social Protection of the Population of the Republic of Tajikistan adopted a number of regulatory documents:

- National plan for prevention, early diagnosis, treatment and palliative care for the period 2021-2030, order of the Ministry of Health and Social Protection of the Population of the Republic of Tajikistan, No. 926 dated November 23, 2020;
- Action plan for the national implementation of visual cancer screening dated February 12, 2021;
- Clinical guidelines for "Prevention and screening of CC", order of the Ministry of Health and Social Protection No. 917 of December 26, 2022;

- Clinical guidelines for cytological examination of the cervical canal (gynecological examination and screening), order of the Ministry of Health and Social Protection No. 841 of November 24, 2022;
- Technical working group on technical training for the introduction of a vaccine against human papillomavirus infection (PVI), order of the Ministry of Health and Social Protection No. 70 of February 7, 2023.

A working group of the Ministry of Health, together with WHO, prepared the first request for the purchase of a vaccine against human papillomavirus (HPV) to the GAVI organization (The Global Alliance for Vaccines and Immunization).

This request was reviewed this year and submitted through the World Health Organization for GAVI support. According to the findings of the working group, in accordance with WHO recommendations, the following vaccines are planned to be purchased:

- The vaccination will cover 10-year-old girls; this group also includes girls in the age group from 11 to 14 years;
- A one-time vaccination provides the necessary sustained immunity for a lifetime;
- The 4-valent Gardasil vaccine was considered the preferred first choice vaccine, with the 2-valent Cervarix vaccine as a replacement (alternative) vaccine;
- The vaccination campaign in educational institutions will be organized jointly with the Ministry of Education and Science of the Republic of Tajikistan;
- Additional payment of vaccination costs at the price of 20 cents per dose (24 thousand US dollars in the first year) will be paid by the Ministry of Finance of the Republic of Tajikistan as a contribution of the Government.

As part of the implementation of visual screening for cervical cancer at the national level, it is necessary to: www.jchr.org

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- Establishment of a coordinating committee "Cervical Cancer Screening Program";
- Develop Regulations on ensuring quality control of cytological studies;
- Develop Regulations on medical examination of patients with precancerous diseases of the cervix;
- Provide training and professional development for medical staff on prevention, screening, diagnosis and treatment of cervical cancer;
- Develop an educational module on the method of visual screening for cervical cancer;
- Train obstetricians-gynecologists, family doctors and primary health care personnel in visual screening of the cervix.
- Involvement of the local community in dissemination of informational, educational and informative materials (invitation to screening, etc.).
- Develop outreach materials on the prevention and diagnosis of cervical cancer (screening, vaccination against HPV, etc.).
- Develop and approve tools for monitoring and assessing the quality of screening, on-site diagnostics, treatment and systemic palliative care for cervical cancer.

5. Discussion

Numerous studies are currently evaluating the best strategies for incorporating imaging screening methods into cervical cancer screening programs [9].

Despite limited resources, most surveyed centers had the capacity to provide screening and treatment for cervical cancer. Access to cervical cancer screening was reported by 49 (96%) institutions [10].

One of the main etiologies contributing to the development of cervical cancer is persistent infection with cancer-causing types of human papillomavirus. The disease can be prevented if precancerous lesions are detected early and treated effectively [11].

The introduction of cytology tests, HPV screening, and HPV vaccination programs has successfully reduced the burden of cervical cancer, especially in developed countries [12–14]. Although there has been a sharp downward trend in cervical cancer incidence and mortality in high-income countries, unfortunately, almost 90% of cases and mortality occur in low- and middle-income countries, such as those in sub-Saharan Africa, Melanesia, South America and Southeast Asia [15, 16].

6. Conclusions

The positive experience of using visual screening in two pilot districts of the Republic of Tajikistan contributes to the expansion of this strategy at the national level, where there is currently a favorable regulatory framework, human resources and technical equipment.

Introduction of cytological tests, visual screening for cervical cancer and human papillomavirus vaccination programs in low- and middle-income countries is an effective way to early detect precancerous lesions of the cervix and diagnose cervical cancer according to the developed visual screening algorithm for cervical cancer, adopted by the health care system of the Republic of Tajikistan.

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