INTERNATIONAL JOURNAL OF TECHNOLOGY AND ACADEMIC RESEARCH

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

Participation in Breast and Cervical Cancer Early Detection Screening among Women and Factors Hindering It: A Narrative Review with a Focus on Uzbekistan

Xudoyberdiyeva Moxira Farhodbek qizi
Andijon davlat tibbiyot instituti
Sog'liqni saqlashni boshqarish va jamoat sog'lig'ini saqlash 1-kurs magistranti
Isroilov Iqboljon Ismoiljon o'g'li
Andijon davlat tibbiyot instituti
Ijtimoiy gigiena va SSB kafedrasi assistenti
doi:https://doi.org/10.5281/zenodo.23756216

Abstract Background. Breast and cervical cancers are the two leading malignancies affecting women worldwide, and both can be detected early through organized screening. Whether screening reduces mortality, however, depends on how many eligible women actually take part.
Keywords: breast cancer; cervical cancer; early detection; screening participation; barriers; women's health; Uzbekistan

Objective. To synthesize the available evidence on the level of women's participation in breast and cervical cancer screening and on the factors that obstruct it, with particular attention to Uzbekistan, where a national screening programme was launched in 2025.
Methods. A narrative review of international surveillance data, World Health Organization (WHO) strategic documents, systematic reviews of low- and middle-income countries (LMICs), and regional studies from Uzbekistan. Barriers were organized using a multi-level access framework (individual, sociocultural, health-system and structural).
Results. Participation remains low in LMICs, where most deaths from both cancers occur. The most consistently reported obstacles are limited knowledge of the diseases and of the purpose of screening, cultural and family-related restrictions, fear and embarrassment, cost and distance, and weakly organized services. Evidence from Tashkent suggests that education, employment, marital status and preventive counselling are strongly associated with screening adherence, while knowledge alone does not guarantee screening behaviour.
Conclusions. Raising participation requires combining organized, population-based invitation systems with culturally sensitive counselling, primary-care delivery and reliable monitoring. Population-level participation data for Uzbekistan are still scarce, which makes primary research in this area a priority.

1. Introduction

Cancers of the breast and the cervix account for a large proportion of the cancer burden carried by women. According to GLOBOCAN 2022 estimates, breast cancer was the most frequently diagnosed cancer among women, with about 2.3 million new cases and roughly 0.67 million deaths, while cervical cancer ranked among the leading cancers with about 0.66 million new cases [1]. A dedicated analysis of cervical cancer estimated 662,301 new cases and 348,874 deaths in 2022; countries with a low Human Development Index experienced about twice the

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

incidence and about five times the mortality of very-high-index countries, and without change the annual burden was projected to reach 760,082 cases and 411,035 deaths by 2030 [2]. The inequality is striking: more than 91% of cervical cancer deaths and more than 79% of breast cancer deaths were reported to occur in LMICs [3].

The two diseases share an important feature. Both have a detectable early phase in which treatment is far more effective and less costly. Mammography-based screening can reveal breast tumours before they become symptomatic, and cytology or testing for high-risk human papillomavirus (HPV) can identify cervical precancer, which can then be treated before it progresses to invasive disease. In recognition of this, the WHO adopted a global strategy to accelerate the elimination of cervical cancer as a public health problem. It sets a threshold of 4 cases per 100,000 women-years and three targets for 2030: 90% of girls vaccinated against HPV by age 15, 70% of women screened with a high-performance test by age 35 and again by age 45, and 90% of women with cervical disease receiving treatment [4].

A screening programme, however, produces benefit only in proportion to the share of the eligible population it reaches. Attending screening is a behaviour shaped by what women know, believe, can afford, are permitted to do, and are offered by the health system. In many LMICs, programmes are not organized at the population level, and uptake is therefore driven largely by opportunistic contact with a clinic [3]. Understanding participation and its obstacles is thus a precondition for designing effective interventions.

Uzbekistan illustrates the challenge. Cervical cancer is the second most common cancer among women in the country, with an incidence of 11.3 per 100,000 reported for 2020, and about 1,103 women die of it each year [5]. WHO figures cited for 2022 attribute 2,246 deaths among Uzbek women to breast cancer [6]. HPV vaccination was introduced in 2019, and in January 2025 the country launched a joint breast and cervical cancer programme under which gynaecologists provide both examinations; cervical screening by HPV testing and liquid-based cytology is offered at ages 30, 40 and 50, and mammography begins at age 45 [6]. Despite these developments, published data on how many women actually participate remain limited [5].

The aim of this review is to describe what is known about participation in breast and cervical cancer screening among women and to systematize the factors that hinder it, drawing out implications for Uzbekistan.

2. Materials and Methods

This article is a narrative review. Sources were identified through searches of open-access scientific literature and the websites of international organizations, using combinations of the terms breast cancer, cervical cancer, screening, participation, uptake, adherence, barriers, low- and middle-income countries and Uzbekistan. Priority was given to (i) global estimates (GLOBOCAN), (ii) WHO strategic documents, (iii) systematic reviews on barriers in LMICs, and (iv) studies and policy reports concerning Uzbekistan. Findings were extracted descriptively and grouped according to a multi-level framework: individual factors (knowledge, beliefs, emotions), sociocultural factors (family, gender norms, religion, community), health-system factors (organization, provider behaviour, information systems) and structural factors (cost, distance, education, employment). A related access-based approach, which distinguishes

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

approachability, acceptability, availability, affordability and appropriateness of services, has been applied in a recent systematic review of 67 studies from LMICs [3], and the grouping used here is consistent with it.

As a narrative review, the work does not claim exhaustive coverage and did not formally appraise study quality. Quantitative figures are reported as published by the original authors.

3. Results

3.1 Levels of participation

Participation is generally lower where screening is unorganized. A systematic review of 53 studies covering 81,210 participants concluded that screening uptake for both cancers in LMICs is low and consequently fails to prevent disease, and it noted that evidence was thinner for low-income and lower-middle-income settings than for upper-middle-income ones [7]. A later review described screening in LMICs as lacking comprehensive cancer control programmes and as therefore largely unorganized [3].

For Uzbekistan, the most detailed recent figures come from a retrospective review of records of 214 women aged 18 to 49 attending consultation clinics in Tashkent between 2023 and 2025. Screening within the recommended interval was documented in 74.8% of them, leaving 25.2% non-adherent. Adherence differed sharply by age: it was 40.7% among women aged 18 to 29, 87.1% among those aged 30 to 39, and 88.7% among those aged 40 to 49 [8]. These numbers should be interpreted with care. They describe women who already attend clinics in the capital, not the general population, and they cannot be generalized to rural districts such as the Fergana Valley or to women who have no contact with the health system. A cross-sectional study of women in Tashkent likewise stressed that data on knowledge of HPV and on screening practice in the general Uzbek population are scarce [5].

3.2 Individual-level barriers

Lack of knowledge is the most frequently cited obstacle. The review of 53 studies identified limited knowledge about both cancers and poor understanding of the role of screening in asymptomatic women as the key barriers in LMICs [7]. A review restricted to cervical screening in LMICs reached the same conclusion, adding that low awareness of the disease and of screening as prevention was the most common individual-level barrier [9]. Fear of a positive result, embarrassment about intimate examination, and the belief that screening is needed only when symptoms appear are recurring themes in this literature.

Importantly, knowledge is necessary but not sufficient. In the Tashkent study of HPV knowledge and screening practice, the authors concluded that adequate knowledge of HPV and cervical cancer prevention may not translate into screening practice [5]. This points to the role of practical and emotional obstacles that information campaigns alone do not remove.

3.3 Sociocultural barriers

Systematic evidence identifies cultural, traditional and religious obstacles, including prohibitions on screening and unsupportive partners and families, together with community misconceptions that discourage attendance [9]. Underlying many of these is a gender context in which women's health needs are given lower priority, and in which a woman may need permission or accompaniment to visit a facility [9]. In societies where modesty and family honour carry great

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

weight, examination by a male clinician or the stigma attached to gynaecological complaints can deter attendance. Such factors have been documented across LMICs in general; their precise weight in Uzbek regions deserves direct study.

3.4 Health-system barriers

Health-system obstacles include absent or poorly implemented screening policies, limited resources, and weak information systems. Authors from the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology have underlined that late diagnosis, insufficient screening coverage and underdeveloped cancer registries limit the evaluation of cervical cancer control in countries with limited resources, including Uzbekistan [10]. Without registries that link invitation, attendance, results and follow-up, programme managers cannot know who has been missed. Earlier work on cervical screening in the country pointed to methodological and organizational problems and to the need for a functioning screening information system [11].

The 2025 national programme addresses part of this gap by placing breast and cervical examinations within gynaecological practice and by planning breast screening centres in regional hospitals [6]. Whether this design will translate into high participation depends on invitation, recall and quality-assurance mechanisms that are not yet documented in the public literature.

3.5 Structural and socioeconomic factors

Cost, distance and limited access to services were among the most common barriers in the systematic review of 67 studies [3]. In the Tashkent records study, screening participation was strongly associated with marital status (odds ratio, OR, 20.97), secondary or higher education (OR 10.0), employment (OR 5.89) and receipt of preventive counselling (OR 19.83), all with $p < 0.001$ [8]. The very wide confidence intervals and the single-site, retrospective design call for caution, but the direction of the associations is consistent with the international evidence that disadvantaged women are the least likely to be screened. The particularly large effect of counselling suggests that a conversation with a health professional may be among the most modifiable determinants.

3.6 Summary framework

Level	Typical obstacles	Illustrative response
Individual	Low knowledge, fear of results, belief that screening is for symptomatic women	Targeted education, counselling at every clinical contact
Sociocultural	Family or partner opposition, modesty norms, community misconceptions	Engagement of family and community leaders, female providers where possible
Health system	No organized invitation or recall, weak registries, uneven quality	Population-based invitation lists, linked registries, quality assurance
Structural	Cost, travel distance, low education, unemployment	Free services, mobile or primary-care delivery, flexible hours

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

4. Discussion

The evidence reviewed here suggests that low participation is not a failure of individual women but the product of several interacting layers. Two practical lessons stand out. First, the global strategy defines success through coverage targets, so measuring participation reliably is itself an intervention [4]. Countries that cannot say how many eligible women were invited, attended and received follow-up cannot manage progress toward the 70% screening target. Second, the strong association of preventive counselling with participation in Tashkent, together with the observation that knowledge alone is insufficient [5, 8], supports interventions that combine information with direct, trusting contact and easy access.

For Uzbekistan, the age structure of the 2025 programme deserves attention. Cervical screening at ages 30, 40 and 50 and mammography from age 45 [6] concentrate effort on women who, according to the Tashkent data, already show relatively high adherence, while younger women attended much less [8]. Whether this reflects different need or a gap in outreach is an open question that cannot be answered with the current evidence.

The review has limitations. It is narrative rather than systematic, it relies partly on abstracts and open-access summaries, and the Uzbek evidence consists of small, mostly urban, single-site studies and programme descriptions. Participation rates from different sources are not directly comparable because definitions of adherence and screening intervals differ.

Implications and recommendations

1. Establish population-based invitation and recall systems linked to a cancer registry so that participation can be measured and non-attenders followed up.
2. Embed structured preventive counselling in every gynaecological and primary-care visit.
3. Design communication with attention to family decision-making and cultural norms, using trusted community figures and, where feasible, female providers.
4. Reduce cost and travel barriers through free screening, mobile services and delivery at primary-care level, particularly in rural regions.
5. Prioritize regionally representative surveys of participation and barriers, including rural districts and younger women.

5. Conclusion

Breast and cervical cancer screening can save lives only when eligible women take part. International evidence shows that low participation in LMICs stems from limited knowledge, sociocultural constraints, weakly organized services and socioeconomic disadvantage. The early evidence from Uzbekistan matches this pattern and highlights the importance of counselling, education and employment status. Because population-level data are lacking, region-specific research on participation and barriers is needed to guide the new national programme.

References

1. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, Jemal A. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2024;74(3):229–263.

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

2. Li Z, Song K, et al. Global landscape of cervical cancer incidence and mortality in 2022 and predictions to 2030: the urgent need to address inequalities in cervical cancer. Int J Cancer. 2025.
3. Srinath A, van Merode F, Rao SV, Pavlova M. Barriers to cervical cancer and breast cancer screening uptake in low- and middle-income countries: a systematic review. Health Policy Plan. 2023;38(4):509–527.
4. World Health Organization. Global strategy to accelerate the elimination of cervical cancer as a public health problem. Geneva: WHO; 2020.
5. Human papillomavirus knowledge and cervical cancer screening practice among Uzbekistan women. Clin Exp Obstet Gynecol. 2023;50(1). doi:10.31083/j.ceog5001004.
6. Gavi, the Vaccine Alliance (VaccinesWork). From vaccines to screenings: how Uzbekistan is transforming cancer care for women. 2025. https://www.gavi.org/vaccineswork/vaccines-screenings-how-uzbekistan-transforming-cancer-care-women
7. Islam RM, Billah B, Hossain MN, Oldroyd J. Barriers to cervical cancer and breast cancer screening uptake in low-income and middle-income countries: a systematic review. Asian Pac J Cancer Prev. 2017;18(7):1751–1763.
8. Iskandarova ST, Voitova GA. Factors associated with adherence to cervical cancer screening and early detection in Tashkent, Uzbekistan. The Bioscan. 2026;21(2):107–115. doi:10.63001/tbs.2026.v21.i02.pp107-115.
9. Systematic review of barriers to cervical cancer screening among women in low- and middle-income countries (studies 2010–2020). Human Sciences Research Council repository. https://repository.hsrc.ac.za/handle/20.500.11910/19635
10. Yusupbekov A, Tuychiyeva S, Djanklich S. The cancer registry system, screening, and population-based survival in cervical cancer. Preventive Medicine and Health. 2026. https://inscience.uz/index.php/preventive-medicine
11. The problems of cervical cancer screening in Uzbekistan. CyberLeninka. https://cyberleninka.ru/article/n/the-problems-of-cervical-cancer-screening-in-uzbekistan