

Barriers to Cervical Cancer Screening and Utilization of Services among Adult Women at Dar-Es-Salaam Region, Tanzania.

Dr Manju Thomas¹, Ms Aichanasia Julius Kawiche²

¹Senior Lecturer, Dept of Clinical Pharmacology, St Joseph College of Health and Allied Sciences, Dar es salaam, Tanzania,

ABSTRACT

Cervical cancer remains a major public health concern in Tanzania, despite the availability of effective screening methods. This study explored perceived barriers to cervical cancer screening among women in the Boko community and compared the findings with global, African, and national evidence.

Objective: To assess the barriers to cervical cancer screening and utilization of services among adult women at Boko District.

Methods: A cross-sectional descriptive study design was employed, using both quantitative and qualitative approaches. A total of 150 adult women were selected through stratified random sampling. Data was collected using structured questionnaires to assess awareness, attitudes, and barriers to cervical cancer screening. Descriptive statistics was used to summarize awareness levels and screening practices.

Results: The results indicate that fear-related barriers, including perceived pain and discomfort (24.67%) and fear of a positive result (30.67%), were present but not dominant. A substantial proportion of participants expressed neutral perceptions regarding test accuracy (56.67%), affordability (66%), and privacy (64%), suggesting limited firsthand experience with screening services. Cultural barriers related to provider gender were minimal, with none of the participants reporting cultural restrictions against examination by male healthcare providers, and overall trust in the healthcare system was high (59.33%). Knowledge of the life-saving benefits of screening was strong, with (86.67%) of women acknowledging its importance; however, this positive attitude did not align with Tanzania's low national screening uptake.

Conclusion: The findings suggest that while awareness and trust are relatively high, practical, informational, and psychological barriers continue to hinder screening utilization. Strengthening targeted health education, improving service accessibility, enhancing provider led communication, and addressing fears related to diagnosis and procedure are essential to increasing cervical cancer screening uptake in this population.

1. INTRODUCTION

1. Definition of Cancer

Cancer is a disease where cells grow and divide out of control, spreading to other parts of the body (WHO, 2023). This happens because genetic changes disrupt the normal process that controls how cells grow and divide, leading to the formation of tumors (Hanahan & Weinberg, 2011). Among different types of cancer, cervical cancer is one of the most serious for women globally.

2. Cervical Cancer Overview

Cervical cancer is a type of cancer that starts in the cervix, the lower part of the uterus connected to the vagina (Ferlay et al., 2019). It is most often caused by a long-lasting infection with high-risk human papillomavirus (HPV). Specifically, HPV 16 causes about 50-60% of cervical cancer cases, while HPV 18 causes about 10-15% of cases. HPV is a sexually transmitted virus. Even though cervical cancer is highly preventable through regular screening and vaccination, it still causes many deaths, especially in low- and middle-income countries (LMICs) (WHO, 2023).

In Tanzania, cervical cancer is a major concern for women, with many not getting screened because they lack awareness, face cultural stigma, have limited access to healthcare, and struggle with financial issues (Mosha et al., 2020). Understanding the reasons why women don't get screened is important for helping them get early detection, treatment, and prevention.

Cervical cancer goes through four main stages, becoming more serious as it progresses (American Cancer Society, 2022):

3. Stages of Cervical Cancer

1. Stage 0 (Carcinoma in situ) – Abnormal cells are only in the top layer of the cervix (pre-cancer).
2. Stage I – Cancer is in the cervix but may grow deeper into the tissue.
3. Stage II – Cancer has spread to nearby areas like the upper vagina but hasn't reached the pelvic wall.
4. Stage III – Cancer spreads to the lower vagina, pelvic wall, or nearby lymph nodes, and may affect the kidneys.
5. Stage IV – The most advanced stage, where cancer has spread to distant organs like the bladder, rectum, lungs, or liver.

Cervical cancer in early stages (0–I) is very treatable. That's why regular screening is so important for early detection and treatment. However, many women in Tanzania and other low- and middle-income countries get diagnosed at later stages (III–IV), where treatment is harder and survival rates are lower (Gakidou et al., 2008).

4. Early detection and treatment

Screening methods like Pap smears, HPV tests, and visual inspection with acetic acid (VIA) can find cervical abnormalities before cancer develops (WHO, 2023).

Despite these methods being effective, many women in Tanzania don't get screened because of limited awareness, cost, cultural beliefs, and poor healthcare systems (Lyimo & Beran, 2012).

This study will look into why women in Tanzania aren't getting cervical cancer screening and suggest ways to improve screening rates and reduce deaths from cervical cancer.

1.1 Problem Statement

Cervical cancer remains a significant public health concern in Tanzania, ranking as one of the leading causes of cancer-related deaths among women. Despite the availability of effective screening methods such as Visual Inspection with Acetic Acid (VIA) and Pap smears, the uptake of these services remains critically low in many communities. In Boko District, located within the Dar es Salaam region, limited data exists regarding the level of awareness, accessibility, and willingness among women to utilize cervical cancer screening services.

Women aged 18–35 in Boko Ward may face a range of barriers—sociocultural, financial, and institutional—that hinder their ability to seek preventive screening. Misconceptions about the disease, fear of diagnosis, limited knowledge of available services, and lack of support from healthcare providers may contribute to this underutilization.

The failure to identify and address these factors places women at increased risk of late diagnosis, reducing the chances of effective treatment and increasing mortality. Therefore, it is essential to assess the level of awareness, explore the barriers to screening uptake, and understand attitudes and willingness toward cervical cancer screening among women in Boko Ward to inform targeted interventions.

1.2 Rationale of Study

Cervical cancer is still a big health problem, especially in low- and middle-income countries, where it is a major cause of cancer-related deaths among women.

Even though there are prevention methods like HPV vaccination and regular screening, many challenges keep them from being used effectively. Finding out these challenges is important for making better research and improving the fight against cervical cancer.

1. High Disease Burden and Mortality Rates

Cervical cancer is one of the most preventable cancers, but it still takes many lives every year.

Research helps find better ways to detect and treat it. But there is not enough research and implementation, which stops the best control methods from being used.

2. Gaps in Research and Implementation

Many studies focus on treatment and screening but don't look at the social, cultural, economic, and infrastructure issues that stop people from accessing prevention and treatment. Addressing these gaps can help make better cancer control programs.

3. Limited Awareness and Stigma

People often don't know much about cervical cancer, and stigma makes it harder for women to take part in screening and research.

Studying the social and personal barriers can help shape better public health policies to increase awareness and acceptance.

4. Healthcare System Challenges

Poor healthcare infrastructure, lack of skilled workers, and not enough funding stop research and effective interventions.

Looking at these barriers can help the government spend resources better.

5. Ethical and Regulatory Constraints

Cervical cancer research involving people has ethical and legal problems that delay studies and stop people from joining.

Finding ways to make this easier and more efficient can speed up progress.

6. Need for Policy and Intervention Improvements

Understanding the problems with cervical cancer research can help make better policies that encourage more effective and fair research.

This can lead to better ways to prevent cancer, find it early, and make treatment more affordable.

Therefore, addressing the issues that stop cervical cancer research is important for improving prevention, early detection, and treatment.

By finding and fixing these problems, researchers, government officials, and healthcare workers can make better strategies and help reduce the global impact of cervical cancer.

RESEARCH QUESTIONS

1. How well do women at Boko District know about cervical cancer screening?

2. What are the main social, cultural, and religious reasons that stop women from getting cervical cancer screening?
3. How do things like cost, availability of screening centers, and distance affect how many women get screened?
4. How do feelings like fear and stigma influence women's decisions to get cervical cancer screening?
5. How does the healthcare system, including trained professionals, counseling, and doctor advice, affect how often women use cervical cancer screening services?

OBJECTIVES

1. Broad Objective

To assess the barriers to cervical cancer screening and utilization of services among adult women at Boko District in October 2025

2. Specific Objectives

1. To Determine the level of awareness of cervical cancer and available screening methods among adult women in Boko district in October 2025
2. To Identify sociocultural, financial, and institutional barriers affecting cervical cancer screening uptake among adult women in Boko district in October 2025
3. To Assess the willingness and attitudes of adult women in the Boko district toward cervical cancer screening services in October 2025
4. To Develop and propose culturally sensitive strategies to improve cervical cancer screening uptake among adult women in Boko district in October 2025

LITERATURE REVIEW

Introduction

Cervical cancer is a big health problem around the world, especially in poorer and middle-income countries.

Even though there are effective ways to prevent it through screening, many people don't use these services. This section reviews studies from Tanzania, Africa, and other parts of the world to better understand what factors influence cervical cancer screening.

Barriers to Cervical Cancer Screening Worldwide

Studies around the world show both similar and different reasons why women do not participate in cervical cancer screening.

In India, low screening uptake remains a major issue. A large survey found that only 3.1% of eligible women had ever been screened for cervical cancer, with traditional beliefs, low knowledge levels, and cultural restrictions being the key barriers (Basu et al., 2018). Logistical barriers, including transportation, childcare responsibilities, and working hours, further hinder women's access to cervical cancer screening. In many low-income communities, women are responsible for household chores and child-rearing, making it difficult for them to take time off for screening appointments. A study conducted in India by George et al. (2019) noted that women with young children or family responsibilities were less likely to attend screening clinics due to a lack of support.

In China, despite government-supported free screening programs in rural areas, uptake is still low. National data show that only 21% of women have ever been screened, especially among women from low socioeconomic backgrounds who have limited awareness of screening services. (Zhang et al., 2023)

In higher-income countries such as the United States, screening rates are higher, but disparities still exist. The U.S. Centers for Disease Control and Prevention (CDC) estimates that **83%** of adult women are up to date with recommended screening. However, uptake is significantly lower among immigrants, uninsured women, and racial minorities, with some immigrant groups having screening rates as low as **60%**.

In the United Kingdom, the national screening program reports a coverage rate of around **72%**, but ethnic minorities experience higher fear of pain, embarrassment, and distrust in healthcare providers—factors that reduce participation.

Even in countries with well-developed prevention programs like Australia and Canada, screening coverage remains below optimal levels. Australia reports a national participation rate of **56%**, with many women citing fear of results, lack of time, and anxiety about test accuracy as reasons for avoiding screening. Similarly, In Canada, screening rates average **70%**, but busy lifestyles and fear of abnormal results are major barriers.

Barriers to Cervical Cancer Screening in Africa

Fear of the screening procedure and the potential diagnosis of cancer is another psychological barrier that prevents women from seeking screening. Studies have found that fear of pain, embarrassment, and the possible emotional distress of receiving a cancer diagnosis are common reasons why women avoid screening. A qualitative study by (Khalil et al.,2017) revealed that many women in Egypt were reluctant to undergo Pap smears due to fears associated with the procedure and a lack of understanding of its benefits.

In Ghana, a study by (Asamoah et al.,2017) showed only 2.8% of women have ever undergone cervical cancer screening. Stigma, embarrassment, and religious beliefs significantly reduce women's willingness to get screened.

In Nigeria, screening uptake is also extremely low, studies report 8% participation. Fear of pain, low trust in healthcare providers, and confusion about the screening process are major contributors to poor uptake.

In Kenya demonstrated that community outreach programs led by trained health workers were effective in educating women about the benefits of cervical screening, leading to higher participation rates (Odama et al., 2019)

A broader study across Sub-Saharan Africa found that in most low-income countries, cervical cancer screening rates are below 20% a study by (Mc Garth et al.,2018), with rural areas being the most affected. The study suggested that government-led awareness campaigns and subsidized services significantly increase participation.

Barriers to Cervical Cancer Screening in Tanzania

In Tanzania, cervical cancer is the leading cause of cancer-related deaths among women, with more than 10,000 new cases and over 6,000 deaths annually (WHO). Despite the high burden, screening rates remain critically low. National surveys show that only 7–12% of Tanzanian women have ever been screened for cervical cancer. The reasons include limited awareness, cost of services, fear of results, and cultural misconceptions.

A study in Northern Tanzania reported that 88% of women had heard of cervical cancer, yet only 14% had undergone screening. Distance to clinics, limited provider recommendations, and misinformation about screening procedures were significant barriers.

In rural Tanzania, the influence of male partners plays an important role. One study found that over 40% of women delayed or avoided screening due to lack of approval from their male partners. Poor support from healthcare workers and long waiting times also reduced uptake.

Other research indicates that cost remains a major issue—more than 30% of women cited screening fees as a reason for not getting screened. Additionally, many women believe that screening is only necessary when symptoms appear, which contributes to late diagnosis.

4. METHODOLOGY

4.1 Study Design

This study used a cross-sectional descriptive design with both quantitative and qualitative approaches to understand the barriers to cervical cancer screening.

4.2 Study Area

The study was carried out at Boko district in Dar-es-salaam, Tanzania. Boko is a part of the Kinondoni Municipal Council. Boko has an estimated of 60,236 people.

4.3 Study Population

The study focused on adult women aged 18-35 years.

4.4 Inclusion and Exclusion Criteria

Inclusion Criteria:

- Women aged 18 years and older.
- Women who are willing to take part and give informed consent.

Exclusion Criteria:

- Women who have had cervical cancer before or are undergoing treatment.
- Women who don't want to participate in the study.

4.5 Sample Size Determination

The sample size was calculated using Fisher's formula:

Where:

- n = required number of participants
- Z = standard normal deviation (1.96 for 95% confidence level)
- P = estimated rate of cervical cancer screening in young women (assumed to be 20%)
- d = margin of error (5%)
- Based on earlier studies, the estimated sample size will be 246 adult women, But due to financial constraints I will use the sample size of 150 adult women.

4.6 Sampling Technique

A stratified random sampling approach was used.

4.7 Data Collection Methods

1. Structured Questionnaire:

- Used to collect data on demographics, awareness, attitudes, and barriers related to cervical cancer screening.

Data Analysis

- Descriptive statistics (percentages, frequencies) to show awareness and screening rates.
- Chi-square tests to find links between awareness levels and screening behavior.
- Data will be analyzed using Microsoft Excel or SPSS.

○ **Variables**

• **Independent Variables.**

1. Knowledge and Awareness Barriers

- Level of knowledge about cervical cancer among researchers and the public
- Awareness of HPV vaccination and screening programs
- Perceived importance of cervical cancer research

2. Socio-Cultural Barriers

- Cultural beliefs about cancer and healthcare
- Stigma associated with cervical cancer screening or research participation
- Religious beliefs affecting participation in research or prevention efforts

3. Healthcare System Barriers

- Availability of research funding
- Access to laboratory and diagnostic facilities
- Availability of skilled healthcare professionals and researchers
- Efficiency of ethical review and approval processes

4. Economic Barriers

- Cost of conducting cervical cancer research
- Financial constraints among potential research participants (e.g., travel costs for follow-ups)
- Funding availability from government and private organizations

Policy and Regulatory Barriers

- Government support for cervical cancer research
- Availability of national research guidelines and frameworks
- Legal and ethical restrictions on clinical trials and data collection

Dependent Variables

Level of cervical cancer research output

- Number of studies conducted on cervical cancer
- Quality of published research in peer-reviewed journals

Participation in cervical cancer research

- Number of researchers involved in cervical cancer studies
- Willingness of women to participate in cervical cancer research
- Recruitment and retention rates in clinical trials

Implementation of research findings

- Integration of research findings into national health policies
- Adoption of evidence-based cervical cancer prevention and treatment strategies
- Effectiveness of research in improving cervical cancer awareness and screening rates

Confounding or Moderating Variables

- These are variables that may influence the relationship between barriers and research outcomes.
- Demographic factors
- Age and gender
- Socioeconomic status of study participants
- Geographical location (urban vs. rural research centers)

- Technological Factors
- Global and Regional Influences
- International collaborations and funding opportunities
- Global health policies on cervical cancer (e.g., WHO strategies)

4.10 Ethical Consideration.

- Ethical approval was obtained from St. Joseph University's Ethical Review Board.
- Informed consent was obtained from all participants.
- Confidentiality of participants' responses was maintained.

4.11 Study Limitations and mitigations

- **Self-Reported Data Bias**
- Participants may overestimate or underestimate their knowledge, fears, or experiences due to social desirability bias or recall bias.
- **Limited Generalizability**
- Since my study focuses on adult women, the findings may not fully represent women from other rural areas, or different socioeconomic backgrounds.
- **Sample Size Constraints**
- With a sample of 150–200 participants, the study may not capture all possible barriers to cervical cancer screening in a broader population.
- **Lack of Clinical Verification**
- The study relies on survey responses rather than actual medical records or screening history, which may affect the accuracy of reported screening rates.
- **Cultural & Religious Sensitivity**
- Some participants may be uncomfortable discussing cervical cancer screening due to cultural taboos or religious beliefs, leading to non-responses or incomplete data.
- **Potential Non-Response Bias**
- Some participants may refuse to take part.
- **Time & Resource Constraints**
- Limited time and funding may affect data collection.

4.12 Expected Results and Significance

- The study was expected to reveal major barriers to cervical cancer screening among adult women in Boko district.
- Findings will help in developing educational programs and policy recommendations to promote screening.
- The results will contribute to national efforts aimed at reducing cervical cancer-related deaths.

RESULTS

DESCRIPTIONS OF THE STUDY PARTICIPANTS

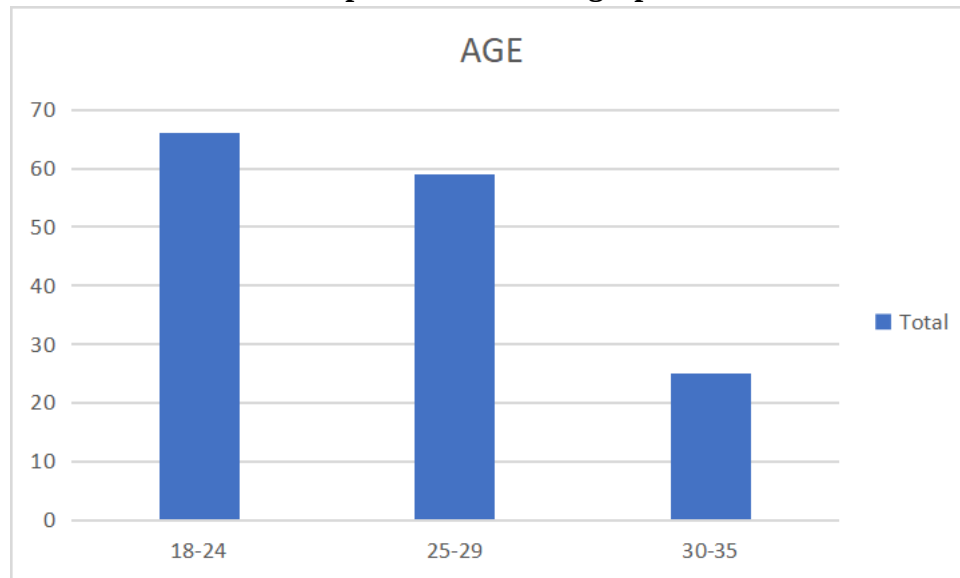
Sociodemographic characteristics of the study participants

The following graphs presents the sociodemographic characteristics of the 150 women who participated in the study. Participants aged 18–24 years constituted the largest age group 44.00% (66), followed by those aged 25–29 years 39.33% (59). Women aged 30–35 years represented the smallest age category, accounting for 16.67% (25).

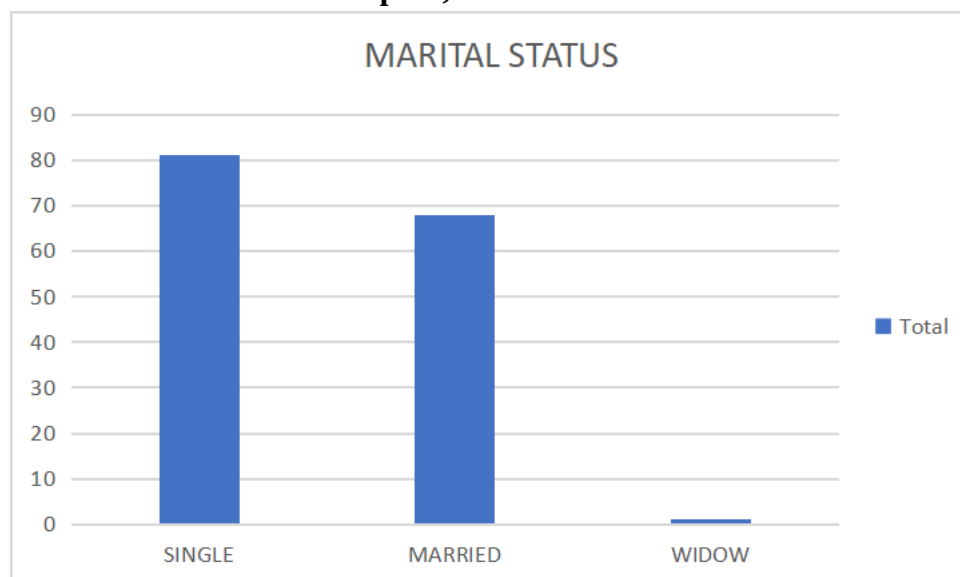
With respect to marital status, single women comprised the largest proportion of the study population 54.00% (81), followed closely by married women 45.33% (68). Only one participant 0.67% (1) was widowed.

Regarding educational attainment, primary education was the most common level achieved 54.67% (82), followed by secondary education 34.00% (51). Participants with university or college education accounted for the smallest proportion of the study population 11.33% (17).

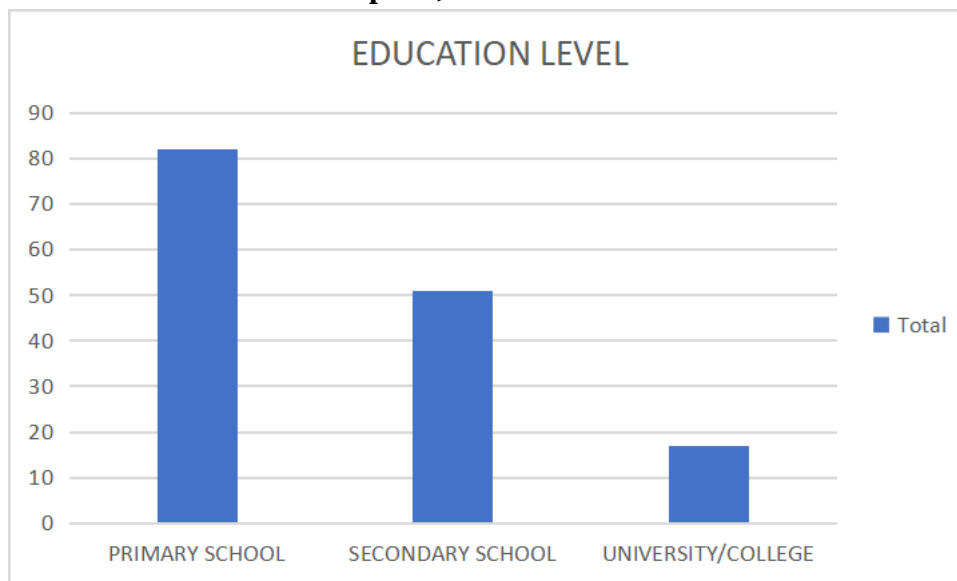
Graph 1; Social demographic



Graph b; Marital Status



Graph C; Education level



KNOWLEDGE AND AWARENESS

The following table presents the participants' awareness and knowledge of cervical cancer of the 150 women included in the study, 68.67% (103) reported having heard of cervical cancer, whereas 31.33% (47) had never heard of the disease.

School emerged as the leading source of information on cervical cancer 33.00% (49), followed by television 29.33% (44), church leaders 20.67% (31), health workers 14.67% (22), and friends or family 2.00% (3).

Knowledge of cervical cancer risk factors was generally limited. A substantial proportion of participants 52.00% (78) were unable to identify any risk factors. Human papilloma virus (HPV) was the most frequently identified risk factor 32.00% (48), followed by multiple sexual partners 14.00% (21), while early sexual intercourse was identified by only 2.00% (3) of participants.

Participants also demonstrated limited knowledge of cervical cancer screening methods. The predominant response was "I don't know," reported by 68.67% (103) of participants. Among those who identified a screening method, the HPV test was the most frequently mentioned 28.00% (42), followed by visual inspection with acetic acid (VIA) 2.00% (3) and the Pap smear 1.33% (2).

Awareness of the recommended age for cervical cancer screening was similarly low. Most participants 75.33% (113) indicated that they did not know the appropriate age to begin screening. Among the remaining participants, 11.33% (17) selected 20–24 years, 8.67% (13) selected less than 20 years, 4.00% (6) selected 25–29 years, and 0.67% (1) selected above 30 years.

A comparable pattern was observed regarding knowledge of the recommended screening interval. The majority of participants 80.00% (120) did not know how often cervical cancer screening should be performed. Annual screening was reported by 14.00% (21), while 6.00% (9) believed screening should be conducted every three years.

Regarding exposure to cervical cancer education, 54.67% (82) of participants reported that they had never received education on cervical cancer, whereas 45.33% (68) indicated that they had previously received such education.

Table 1; Knowledge and awareness

EVER HEARD OF CERVICAL CANCER?	TOTAL
YES	(103) 68.67%
NO	(47) 31.33%
TOTAL	(150) 100%
SOURCE OF INFORMATION	TOTAL
TELEVISION	(44) 29.33%
HEALTH WORKER	(22) 14.67%
FAMILY/FRIENDS	(3) 2%
SCHOOL	(33) 22%
CHURCH LEADERS	(47) 31.33%
I HAVENT HEARD	(1) 0.67%
TOTAL	(150) 100%
RISK FACTORS	TOTAL
EARLY SEXUAL INTERCOURSE	(3) 2%
MULTIPLESEXUAL PARTNERS	(21) 14%
HPV	(48) 32%
I DON'T KNOW	(78) 52%
TOTAL	(150) 100%
SCREENING METHOD	TOTAL
PAP SMEAR	(2) 1.33%
VIA	(3) 2%
HPV TEST	(42) 28%
I DONT KNOW	(103) 68.67%
TOTAL	(150) 100%
AGE FOR SCREENING	TOTAL
<20 YEARS	(13) 8.67%
20-24 YEARS	(17) 11.33%
25-29 YEARS	(6) 4%
>30 YEARS	(1)0.67%
I DON'T KNOW	(113) 75.33%
TOTAL	(150) 100%
HOW MANY TIMES	TOTAL
EVERY YEAR	(21) 14%
AFTER 3 YEARS	(9) 6%
I DON'T KNOW	(120) 80%

TOTAL	(150) 100%
EDUCATION ON CERVICAL CANCER	TOTAL
YES	(68) 45.33%
NO	(82) 54.67%
TOTAL	(150) 100%

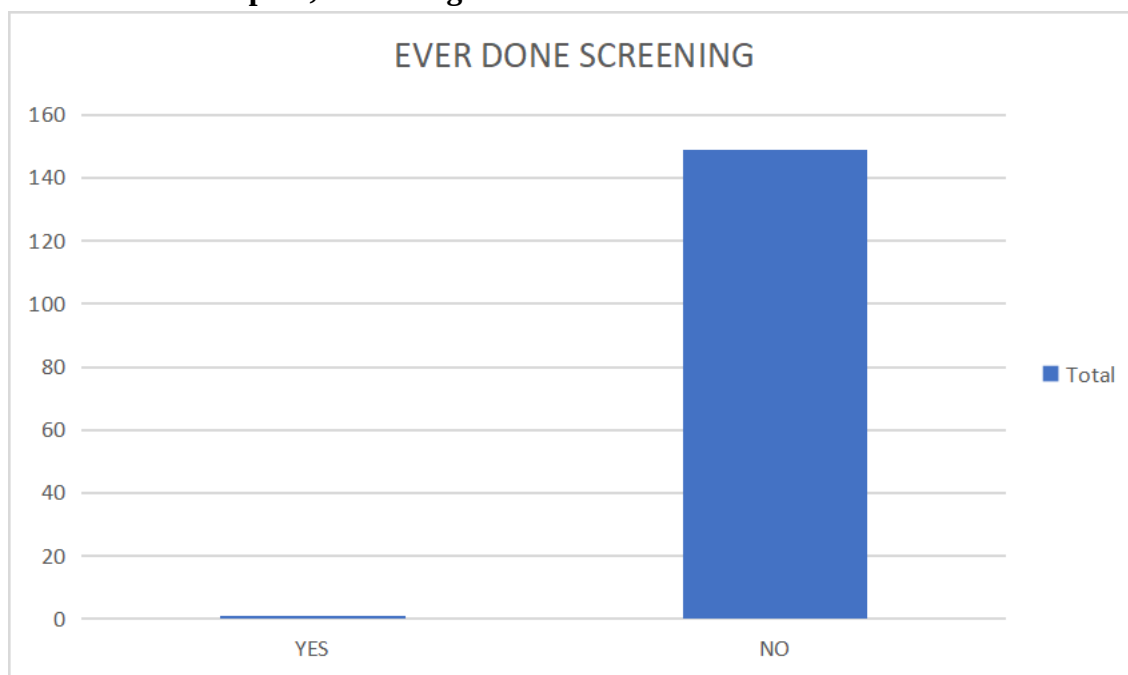
SCREENING BEHAVIOR AND UTILIZATION OF SERVICES

The following graph illustrates the cervical cancer screening practices and preferences of the study participants. Screening uptake was remarkably low, with only one participant 0.67% (1) reporting having undergone cervical cancer screening, while 99.33% (149) had never been screened.

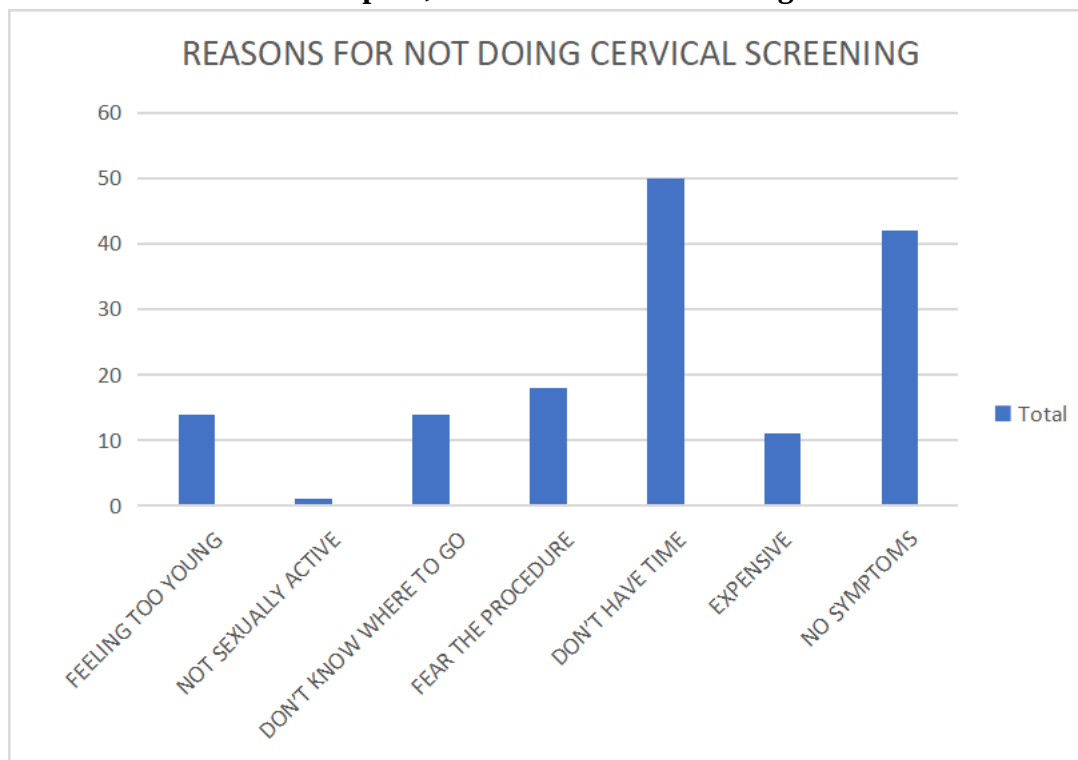
Among participants who had not undergone screening, the most frequently reported barrier was lack of time 33.33% (50), followed by the absence of symptoms 28.00% (42). Fear of the screening procedure was reported by 12.00% (18) of participants, while 9.33% (14) indicated that they did not know where screening services were available. An equal proportion 9.33% (14) felt they were too young to be screened. Other reported barriers included the perceived high cost of the procedure 7.33% (11) and not being sexually active 0.67% (1).

Among participants who expressed willingness to undergo cervical cancer screening, government hospitals were the preferred choice for the majority 78.67% (118), whereas 21.33% (32) preferred private hospitals.

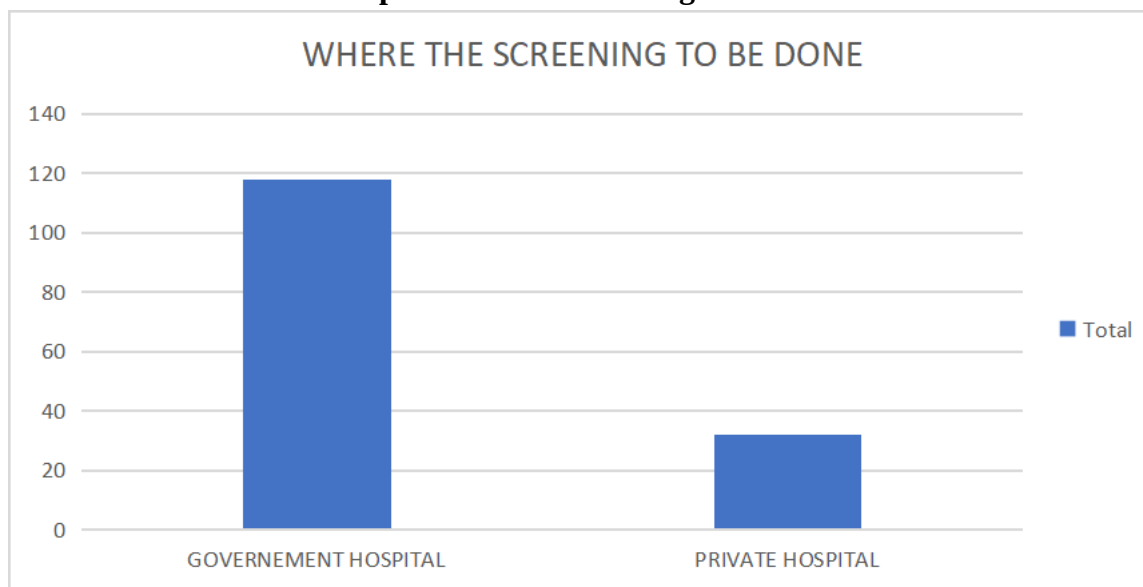
Graph a; Screening behavior and utilization of services



Graph b; Reasons for not screening



Graph C: Where screening to be done



PERCIEVED BARRIERS

The following table summarizes participants' perceptions and attitudes toward cervical cancer screening. Responses regarding whether cervical cancer screening is painful and uncomfortable were mixed, with 38.67% (58) remaining neutral, 36.67% (55) disagreeing, and 24.67% (37) agreeing with the statement. Concerning fear of receiving a positive screening result, 39.33% (59) disagreed, while 30.67% (46) agreed and 30.00% (45) remained neutral. Similarly, more than half of the participants 56.67% (85)

were neutral regarding concerns about the accuracy of cervical cancer screening tests, whereas 28.67% (43) disagreed and 14.67% (22) agreed.

Cultural beliefs appeared to have minimal influence on screening decisions, as none of the participants agreed that their culture discouraged examination by a male healthcare provider. Instead, 66.00% (99) disagreed with the statement, while 34.00% (51) remained neutral.

With regard to trust in the healthcare system, 59.33% (89) disagreed with the statement compared with 38.00% (57) who were neutral and only 2.67% (4) who agreed. Likewise, over half of the participants 51.33% (77) disagreed that they were unaware of the importance of cervical cancer screening in preventing the disease, while 30.00% (45) were neutral and 18.67% (28) agreed.

Perceptions of affordability were largely inconclusive, with 66.00% (99) expressing neutral views on whether cervical cancer screening was affordable. Meanwhile, 20.67% (31) disagreed that cost was a barrier, whereas 13.33% (20) agreed. A similar pattern was observed regarding privacy in screening facilities, where 64.00% (96) remained neutral, 27.33% (41) disagreed that privacy was inadequate, and 8.67% (13) agreed.

When asked whether inadequate information and awareness constituted a barrier to cervical cancer screening, equal proportions of participants either disagreed 40.00% (60) or remained neutral 40.00% (60), while 20.00% (30) agreed.

Despite the varying perceptions of barriers, participants demonstrated a positive attitude toward the value of cervical cancer screening. The vast majority 86.67% (130) believed that screening saves lives, whereas only 1.33% (2) disagreed and 12.00% (18) were neutral.

Table 2; Perceived Barriers

Cervical cancer is painful and uncomfortable	TOTAL
AGREE	24.67% (37)
DISAGREE	36.67% (55)
NEUTRAL	38.67% (58)
Grand Total	100% (150)
I fear receiving a positive result	TOTAL
AGREE	30.67% (46)
DIAGREE	39.33% (59)
NEUTRAL	30% (45)
Grand Total	100% (150)
Fear on the accuracy of the test	TOTAL
AGREE	14.67% (22)
DISAGREE	28.67% (43)
NEUTRAL	56.67% (85)
Grand Total	100% (150)
My culture discourages to be examined by a male provider	TOTAL

AGREE	0% (0)
DISAGREE	66% (99)
NEUTRAL	34% (51)
Grand Total	100% (150)
I don't trust the healthcare system	TOTAL
AGREE	2.67% (4)
DISAGREE	59.33% (89)
NEUTRAL	38% (57)
Grand Total	100% (150)
I don't know how important screening is for preventing cervical cancer	TOTAL
AGREE	18.67% (28)
DISAGREE	51.33% (77)
NEUTRAL	30% (45)
Grand Total	100%(150)
Screening isn't affordable	TOTAL
AGREE	13.33% (20)
DISAGREE	20.67% (31)
NEUTRAL	66% (99)
Grand Total	100% (150)
There is no enough privacy in screening facilities	TOTAL
AGREE	8.67% (13)
DISAGREE	27.33% (41)
NEUTRAL	64%(96)
Grand Total	100%(150)
There is inadequate information and awareness	TOTAL
AGREE	20% (30)
DISAGREE	40%(60)
NEUTRAL	40% (60)
Grand Total	100% (150)
Do you believe screening saves lives?	TOTAL
AGREE	86.67%(130)
DISAGREE	1.33%(2)
NEUTRAL	12%(18)
Grand Total	100%(150)

DISCUSSION

The findings of this study provide insight into the perceived barriers to cervical cancer screening among women in the Boko community. When compared with global, African, and Tanzanian, the results demonstrate both similarities and key differences in how women perceive screening-related obstacles.

Perceived Pain and Discomfort

In this study, 24.67% of women agreed that cervical cancer screening is painful and uncomfortable, while 36.67% disagreed and 38.67% were neutral. Globally, fear of pain is a more prominent barrier. For example, studies in the United Kingdom where national screening coverage is 72% show that ethnic minority women frequently cite pain and embarrassment as reasons for non-participation. Similar concerns are also highlighted in Australia, where the national screening uptake is 56% but fear of discomfort remains a leading barrier.

The relatively low level of concern about pain in the current study may be attributed to limited firsthand screening experience, as national data indicate that only 7–12% of Tanzanian women have ever been screened. The high neutrality 38.67% likely reflects uncertainty rather than absence of concern, indicating gaps in detailed awareness of what the screening procedure entails.

Fear of Positive Results

Fear of a positive result was reported by 30.67% of participants. In Australia and Canada, where screening rates are 56% and 70% respectively, fear of receiving abnormal results is widely documented. Likewise, in African countries such as Ghana 2.8% screening uptake and Nigeria 8% uptake, fear of cancer diagnosis contributes significantly to avoidance of screening.

Fear of Test Accuracy

A large proportion of participants 56.67% were neutral regarding fears about test accuracy, with only 14.67% agreeing. This contrasts with studies in high-income countries like Australia, where concerns about test accuracy and reliability are frequently cited despite higher screening coverage. The neutral responses in this study likely reflect limited exposure to cervical cancer screening—as national Tanzanian data show low screening experience despite 88% awareness levels in some regions.

Cultural Barriers and Provider Gender

One of the most striking findings in this study is that 0% of participants agreed that their culture discourages being examined by a male provider. Instead, 66% disagreed and 34% were neutral. This sharply contrasts with literature from India 3.1% screening coverage, Ghana 2.8%, and parts of Tanzania where cultural beliefs and gender norms are strong barriers.

The results here suggest that the Boko community exhibits relatively progressive attitudes about provider gender, which may positively influence future screening initiatives.

Trust in the Healthcare System

Only 2.67% of women indicated distrust in the healthcare system, with 59.33% disagreeing. This is much lower than findings from Nigeria, where distrust is a major barrier, and the UK, where ethnic minority women often express lower trust. While 38% of participants were neutral, overall trust appears relatively high in this study population.

Knowledge and Awareness Barriers

Although 51.33% of participants disagreed that they lack knowledge of the importance of screening, 18.67% agreed and 30% were neutral. This partially mirrors the Tanzanian context, where despite high awareness of cervical cancer (e.g., 88% in Northern Tanzania), screening uptake remains low (7–14%) due to insufficient detailed understanding and misinformation.

Affordability and Cost Concerns

Only 13.33% agreed that screening is unaffordable, while 66% were neutral. This contradicts several Tanzanian and African studies where cost is one of the biggest barriers in Tanzania, more than 30% of women report screening fees as a reason for non-uptake.

The high neutrality rate (66%) may indicate limited exposure to screening services, meaning many women are unsure about the actual cost. It may also suggest the availability of subsidized or free services in the area.

Privacy Concerns

A small proportion (8.67%) agreed that privacy is insufficient in screening facilities, while 27.33% disagreed and 64% were neutral. This differs from international findings in Ghana, the UK, and Canada where embarrassment and privacy concerns significantly reduce screening uptake. Again, the high neutrality suggests lack of direct screening experience.

Belief That Screening Saves Lives

An overwhelmingly positive finding is that **86.67%** of participants believe screening saves lives. This aligns with global patterns where understanding the health benefits of screening strongly predicts future uptake. However, Tanzania's low national screening rate 7% suggests that knowledge alone does not guarantee participation, especially when practical barriers such as distance, time, fear, or lack of provider recommendation exist.

CONCLUSION AND RECOMMENDATION

In a nutshell comparing this study with global, African, and Tanzanian literature it has revealed that:

- **Cultural barriers and mistrust are much lower** in this community than in many countries where screening rates are low compared to India 3.1%, Ghana 2.8%, Nigeria 8%.
- **Fear-based barriers** (pain, positive results, accuracy) are present but not extreme.
- **Knowledge gaps remain significant**, similar to Tanzanian national findings indicating high awareness but low understanding of screening processes.
- **High neutrality across most barriers** suggests uncertainty due to limited personal experience with screening rather than strong negative beliefs.

Although the community shows positive attitudes including high belief in the life-saving nature of screening practical barriers and informational gaps continue to limit actual screening behavior. Persistent uncertainty indicates a critical need for intensified education campaigns, provider-initiated recommendations, and community-based outreach programs to translate knowledge into screening uptake.

RECOMMENDATION

Drawing on the findings of this study on perceived barriers to cervical cancer screening among women in the Boko community, the following recommendations are proposed:

1. Improve Focused Health Education at Community Level

Although the majority of participants acknowledged the life-saving value of cervical cancer screening, the high proportion of neutral responses regarding pain, cost, privacy, and test reliability suggests limited detailed understanding. Health education initiatives should therefore emphasize:

- Clear explanations of the screening process to reduce uncertainty and fear.
- Accurate information about test effectiveness and safety.

- Correction of misconceptions surrounding cervical cancer and screening outcomes.
- Emphasis on the importance of early diagnosis since cervical cancer is treatable.
- Early diagnosis and treatment can reduce the burden of cancer medications to the government and decrease mortality.

Such educational activities should be delivered through community-based platforms including women's groups, religious institutions, community leaders, and local media.

2. Expand Availability and Convenience of Screening Services

To address the gap between positive attitudes and low screening uptake, screening services should be made more reachable by:

- Incorporating cervical cancer screening into routine reproductive and maternal healthcare services.
 - Increasing the use of outreach programs and mobile clinics.
 - Providing services at times that are convenient for women with work or household responsibilities.
- Also compensate the women who take time to go for screening such as paid leave.

Enhanced service availability may facilitate the translation of awareness into actual utilization.

3. Strengthen the Role of Healthcare Providers in Promoting Screening

Given the influence of healthcare provider recommendations on screening behavior, providers should be supported to:

- Routinely encourage eligible women to undergo screening.
- Offer reassurance regarding discomfort, confidentiality, and procedure-related concerns.
- Communicate clearly about the implications of abnormal results and the availability of follow-up care.

The relatively high level of trust in healthcare services observed in this community provides a strong foundation for provider-led promotion efforts.

4. Reinforce Privacy and Respectful Service Delivery

Although privacy was not widely identified as a barrier, uncertainty among participants indicates a need for reassurance. Health facilities should:

- Maintain adequate privacy during screening procedures.
- Inform clients about confidentiality measures prior to the examination.
- Ensure respectful and dignified care to sustain trust and comfort.

These actions can help prevent privacy concerns from emerging as barriers as screening services expand.

5. Increase Transparency Regarding Screening Costs

Uncertainty about the affordability of screening highlights the need for clearer communication. Health authorities and facilities should:

- Actively disseminate information on free screening services.
- Display clear cost information during community outreach and at health facilities.
- Support policies that minimize or eliminate financial barriers to screening.

Clear and consistent messaging about costs may reduce hesitation and improve participation.

6. Reduce Fear of Diagnosis Through Counseling and Community Support

Fear of receiving a positive screening result remains a significant concern. To mitigate this:

- Counseling before and after screening should be strengthened.
- Educational messages should stress the benefits of early detection and treatment.
- Use of testimonies from women who have been screened or treated successfully may help normalize screening and reduce anxiety.

7. Utilize Flexible Provider Gender Approaches

The absence of strong cultural objections to male healthcare providers presents an opportunity to improve service coverage. Program planners should:

- Deploy both male and female trained providers while maintaining respectful care standards.
- Focus on provider competence and communication rather than gender restrictions.
- Continue to assess community perceptions to ensure ongoing acceptability.

8. Promote Further Research

Additional research is recommended to:

- Investigate the underlying reasons for high neutral responses through qualitative approaches such as interviews and focus group discussions.
- Examine health system factors that may affect screening access and continuity of care.
- Assess the impact of targeted community interventions on screening uptake.

REFERENCES

1. American Cancer Society (2022). Stages of Cervical Cancer. Retrieved from www.cancer.org.
2. Ferlay, J., Colombet, M., & Soerjomataram, I. (2019). Global cancer statistics. *International Journal of Cancer*, 144(8), 1941-1953.
3. Gakidou, E., Nordhagen, S., & Obermeyer, Z. (2008). Coverage of cervical cancer screening in 57 countries. *The Lancet*, 370(9595), 2123-2129.
4. Hanahan, D., & Weinberg, R. A. (2011). Hallmarks of cancer: The next generation. *Cell*, 144(5), 646-674.
5. Lyimo, F. S., & Beran, T. N. (2012). Demographic factors associated with cervical cancer screening uptake in Tanzania. *BMC Women's Health*, 12, 22.
6. Mosha, D., Mahande, M. J., & Msuya, S. E. (2020). Factors affecting uptake of cervical cancer screening in Tanzania. *Infectious Agents and Cancer*, 15(1), 23.
7. WHO (2023). Global strategy for cervical cancer elimination. World Health Organization
8. Basu, P., Meheus, F., & Chami, Y. (2018). Cervical cancer screening in developing countries. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 47, 1-11.
9. Ebu, N. I., & Mupepi, S. C. (2021). Knowledge, practice, and barriers toward cervical cancer screening in Ghana. *PLOS ONE*, 16(5), e0251900.
10. Mabelele, M., Mihayo, P., & Kazaura, M. (2018). Barriers to cervical cancer screening uptake in Tanzania: A qualitative study. *Reproductive Health*, 15(1), 137.
11. Marlow, L. A., Waller, J., & Wardle, J. (2019). Barriers to cervical cancer screening among ethnic minority women in the UK. *British Journal of Cancer*, 108(1), 229-233.
12. Ndikom, C. M., & Ofi, B. A. (2012). Barriers to cervical cancer screening among Nigerian women. *Journal of Cancer Education*, 27(4), 742-748.
13. Shayo, F. K., Munisi, D. Z., & Wambura, C. M. (2022). Male partner involvement in cervical cancer screening decisions in Tanzania. *BMC Public Health*, 22, 445.
14. Smith, M. A., Hall, M. T., & Saville, M. (2020). Changes in cervical cancer screening in Australia: An analysis of trends. *Medical Journal of Australia*, 212(5), 204-210.
15. Watkins, M. M., Gabiam, Y., & Head, K. J. (2017). Disparities in cervical cancer screening among immigrant women in the US. *Preventive Medicine*, 98, 59-65.

16. Were, E., Nyaberi, Z., & Buziba, N. (2011). Perceptions of risk and barriers to cervical cancer screening in Kenya. *Public Health Nursing*, 28(2), 126-135.
17. Zhao, F. H., Qiao, Y. L., & Zhang, X. (2019). Barriers to cervical cancer screening in China. *Asian Pacific Journal of Cancer Prevention*, 20(5), 1397-1404.
18. Zhang B, Wang S, Yang X, et al. Knowledge, willingness, uptake and barriers of cervical cancer screening services among Chinese adult females: a national cross-sectional survey. *BMC Women's Health*. 2023;23:435.