

Barriers and Facilitators of Cervical Cancer Screening among Women in Marembo Ward, Kitagata Town Council, Sheema District

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Abstract

Introduction: Cervical cancer screening in Uganda has remained relatively low, with less than 10% eligible women screened, despite the availability of cervical cancer screening services in most health facilities. The objective of this study was to assess the barriers and facilitators of cervical cancer screening uptake among women aged 21-65 years in Marembo Ward, Kitagata town council in Sheema District.

Methodology: This research study employed mixed-methods design using concurrent triangulation design for qualitative approach and cross-sectional design for quantitative approach to gather in-depth insight into the barriers and facilitators of cervical cancer screening. We recruited a total of 100 participants and conducted six focus group discussions (FGDs) with the women aged 21-65 years in Marembo Ward, Sheema District. The participants for FGDs were chosen through convenient sampling methods. The interviews were audio-recorded and transcribed for analysis. Qualitative data were analyzed using thematic analysis techniques and quantitative data were analysed using multiple logistic regression for odds ratios at a p-value < 0.05.

Results: Screening uptake was low at 18.0%. Socio-demographic facilitators were age 31-45 years (AOR=3.54, p=0.031), tertiary education (AOR=14.20, p<0.001), and formal employment (AOR=5.11, p=0.029). Individual barriers included lack of information (69.0%), fear of positive results (62.5%), and fear of pain (54.9%). Significant institutional facilitators were service affordability (83.3%) and peer influence (77.8%). Qualitative themes, revealed instrument-related fears, restricted service utilization.

Conclusion: Cervical cancer screening uptake is critically low, constrained by socio-demographic disparities, institutional barriers, and cultural norms. To improve utilization, interventions must address spousal dynamics, optimize health systems by deploying female examiners.

Keywords: *Cervical cancer, screening, facilitators, barriers, women, community sensitization*

Introduction

Cervical cancer is a malignant disease that affects the cervix and remains the fourth most common cancer occurring in women worldwide. It primarily develops at the squamocolumnar junction with approximately 99.7% cases caused by persistent infection with Human Papilloma Virus (HPV). HPV alters cell-cycle control within the epithelial cells, leading to uncontrolled cell division^{16, 33}. Several established risk factors increase this progression including smoking, multiple sexual partners, HIV infected individuals, and recurrent infection with sexually transmitted diseases^{45, 34, 40}.

Globally, approximately 660,000 cervical cancer new cases are diagnosed annually, resulting in approximately 350,000 cancer-related deaths World Health Organization^{49, 9}. In developed countries, the incidence, morbidity, and mortality rates of cervical cancer are seven to ten times lower due to robust screening programs. For instance, Saudi Arabia recorded only 366 cervical cancer cases^{46, 28}.

In contrast, Low-and Middle Income Countries (LMICs) including Africa reported the highest cases of the global burden, accounting for 84% cases of global morbidities, and more than 85% annual mortalities. Sub-Saharan African countries specifically accounts for a disproportionate prevalence, experiencing a high annual active cases approximate at 450,000 with annual new cases of 110,000 and a standardised prevalence of 111 cases per 100,000 with a mortality rate of 85%^{6, 49}.

In East Africa, the annual burden of new cervical cancer cases stands at 45,707. Kenya reports an estimated annual incidence of 2,454 cases with 1,676 related deaths. However, Uganda records the highest burden in the region, with an alarming incidence of 6,413 new cases yearly and an annual mortality rate of 4,301 persons^{33, 16}.

This high global prevalence of cervical cancer prompted the World Health Organization (WHO) to introduce a global strategy to accelerate the elimination of cervical cancer by 2030 where the priority was given to screening women aged 21 years and above as this age band captures the window when high-grade precancerous lesions are most likely to be detected and treated before progression to invasive cancer⁴⁹. The strategy aims to achieve 90% vaccination coverage, 70% screening coverage, and 90% treatment coverage in each country.

To achieve this, the WHO recommends visual inspection with acetic acid (VIA) or visual inspection with Lugol's iodine (VILI) every three years for women aged 30 to 49 years in low-resource settings⁴⁹. Cytological screening via a Pap smear should ideally begin at age 21 and be repeated every three

years. Meanwhile, women aged 30 to 60 years should undergo co-screening with a Pap smear and an HPV DNA test every five years, or every three years if utilizing a Pap test alone^{9, 46}.

Screening and preventive cervical cancer programs mainly rely on the primary level of prevention targeting Human papillomavirus vaccination (HPV) infection prevention through HPV vaccination and secondary level prevention which is concerned with early detection of cytological abnormalities of the cervical epithelial cells through Pap smear. However, HPV are proven safe and effective but only protects 70% of women from cervical cancer^{9, 32}.

However, sustaining screening programs and maintaining the appropriate coverage is challenging and have been decreasing over recent years in these countries⁴⁰. Globally, only 3.2% of 25–64 year-old women were screened every three years compared to 40–50% in the developed world, although Africa suffers from chronically low screening coverage averages around 10.15% far below the WHO 2030 screening target of 70%¹⁰ whereas South Africa, only 13.6% coverage has been reached and in Sub Sharan Africa (SSA), the coverage still remains low where Ethiopia recorded the overall coverage of cervical cancer screening ranging from 2.0% to 25.5%. this low coverage failed to aligns with the global agenda of Sustainable Development Goal (SDG) 3 which aims to achieve 70% rate of coverage by 2030^{6, 14, 28 & 37}.

In East Africa, especially Uganda where the screening cervical cancer uptake was low at only 4.2% out of which 7% of those screened were from central region, 3.2 % cervical cancer screening coverage was reported in Kenya^{16, 33}.

This low cervical cancer screening uptake has increased the risk of exposure to the disease and could be attributed to the belief that the test is unnecessary for asymptomatic women, lack of trust in healthcare services, inconvenient appointment times, and long travel distances to screening services, religious beliefs, feelings of pain, and embarrassment, low-level awareness of screening, spousal approval, fear of residual effects of test results, negative community perceptions, and long waiting times²⁸.

In Uganda however, studies have assessed the uptake of cervical cancer screening but there's paucity of data on cervical cancer screening among women aged 21-65 years. Yet, considering the few numbers of women who have taken up cervical cancer screening it is relevant to comprehend the facilitators and barriers to screening. These approaches should be based on an understanding of

the magnitude of facilitators and barriers to cervical cancer screening among women aged 21-65 years in Marembo ward, Kitagata Town Council, Sheema District so as to inform policy.

Main objective of the study

To assess the barriers and facilitators of cervical cancer screening uptake among women aged 21-65 years in Marembo Ward in Kitagata Town Council, Sheema District, in order to inform strategies for improving screening rates.

Specific objectives of the study

1. To determine the socio-demographic/individual-level barriers of the uptake of cervical cancer screening services by women aged 21-65 years at Marembo Ward in Kitagata Town Council, Sheema District.
2. To identify the health system-related factors associated with the uptake of cervical cancer screening services by women aged 21-65 years at Marembo Ward in Kitagata Town Council, Sheema District.
3. To determine the facilitators of cervical cancer screening uptake among women aged 21-65 years in Marembo Ward in Kitagata Town Council, Sheema District

Justification of the study

Cervical cancer is the leading cause of cancer-related mortality among women in Uganda, with approximately 6,959 new cases and 4,607 deaths annually. While the World Health Organization (WHO) and Uganda national guidelines target 70-80% coverage, actual national screening rates remain between 4.8% and 30%, particularly in rural areas^{29, 48 & 26}. This indicates that socio-cultural and psychological factors as well as lack of male partner support, inconsistent availability of supplies, long waiting hours, and poor attitude from some health workers are significantly hindering uptake in wards like Marembo. Direct counseling from a provider is the strongest individual predictor for a woman choosing to screen^{16, 33}. This research may provide context-specific data to assess the barriers and facilitators of cervical cancer screening uptake among women aged 21-65 years in Marembo Ward in Kitagata Town Council, Sheema District.

Research methodology

Research design and setting

The researcher conducted a mixed method study using concurrent triangulation design where both qualitative and quantitative data were collected in the same phase, qualitative interviews were conducted first to enable modification of quantitative tool. The mixed methods was used to enable triangulations of information to better understand cervical cancer screening services uptake barriers and facilitators and the participants' live experiences in-depth. The quantitative component employed a descriptive cross-sectional design to assess the barriers and facilitators of cervical cancer screening uptake among women aged 21-65 years. This design was chosen to allow the researcher to collect data on different variables in the shortest possible time. The qualitative component adopted a phenomenological study design to explore lived experiences of cervical cancer screening services uptake among the women living in Marembo Ward. Phenomenological design was chosen because it seeks to understand deeply lived experiences and provide rich data.

Study population

The study population consisted of all women aged 21-65 years residing in Marembo Ward during the period of data collection. This age group was targeted because it aligned with national cervical cancer screening recommendations and represents women at measurable risk of cervical precancerous changes.

Sample size determination

Quantitative sample size and sampling procedure

The sample size was determined using Yamane formula (1967) since the study targeted a finite community population adjustment.

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = required sample size

N = estimated number of eligible women aged between 21 years to 65 years currently residing in Marembo ward according to the chairperson records estimated about 680

e = margin of error at 10% (0.1). Since the populations are homogeneous hence, a smaller sample size with a wider margin of error is statistically sufficient to capture the general consensus ³³.

Substituting the values:

$$n = \frac{680}{1+680(0.1)^2}$$

n = 87 participants

Therefore, to cover up the 10% margin of error, the researcher opted to recruit a sample size of 100 participants.

This study employed a systematic random sampling technique to recruit study participants. This probability sampling method ensures that every eligible study participants had an equal chance of being selected. The sampling frame consisted of the comprehensive list of 680 eligible women obtained from the Marembo ward chairperson's official records. The sampling interval (k) was determined by dividing the total population (N = 680) by the target sample size (n = 100), $k = 680/100 \approx 6.8$. A random number generator was used to select a starting point between 1 and 6. Beginning from that random index, every 6th woman on the chairperson's register was systematically selected and approached to participate in the study. This procedure continued sequentially through the list until the target sample size of 100 participants was successfully achieved.

Qualitative sample size and sampling procedure

A qualitative sample sizes were determined by data saturation, a nested purposive sampling technique was used to select participants from the initial quantitative sample as described by the mixed-methods recommendation of Creswell (2014), and a subsample of 10% of the quantitative respondents was selected. Therefore, a total of 10 women were purposively sampled to participate in focus group discussions. This sample size is deemed sufficient for a homogeneous population to achieve data saturation. Conducting interviews was stopped when no new themes or insights were generated.

Eligibility criteria

Inclusion criteria

All women aged 21-65 years who were living in Marembo Ward and had lived for at least six months and provided informed consent to take part in the study.

Exclusion criteria

This study excluded;

- Women who were admitted in the hospital wards
- Women below the age of 21 years and women above the age of 65 years

- Women who did not consent to participate in the study
- Those with a history of having had or currently being treated for cervical cancer.

Data collection tools

These are instruments used by researcher to collect data according to objectives of research.

Quantitative data collection tool

The study employed a custom-designed structured questionnaire consisting of closed ended questions to capture the patients' demographic data, barriers and facilitators and uptake of cervical screening services (Supplementary File 1). The questionnaire tool was chosen because it is fast, practical and easier to obtain a larger sample in the shortest possible time. This enabled collection of data, which was easily coded and analysed. The research assistants gave the questionnaire to study participants who were able to read and write. Those who were not able to read and write, the research assistants assisted in filling the questionnaire by asking them questions in Runyakitara. This process happened after a brief explanation of the study and written consent. The participants were selected from the women who were living in Marembo ward, Kitagata Sub-County in Sheema district and met the sample requirement.

Qualitative data collection tool

Qualitative data were collected using in-depth, semi-structured face-to-face interviews (Supplementary File 1) to explore the lived experiences of cervical cancer screening uptake. Semi-structured interviews with probes, and guided areas to be explored and gave interviewer and interviewee flexibility to diverge to get more details about phenomena. Information rich participants were purposively selected considering various demographic variables to participate in the study. They were given appointment to come for an in-depth interview, and this was through the help of research assistants. All in-depth interviews were conducted in a quiet, and private environment which was agreed upon by the participant. Data were collected using audio recording with consent from the participant. The interviewer also took notes during the interview process. The interviews was done until redundancy was achieved.

Data collection procedures

After receiving ethical approval and administrative clearance, the researcher recruited and trained two research assistants who were fluent in Runyangkole. The research team visited the households during appropriate hours to identify eligible women but before accessing the participants for the study, permission was sought from the gatekeepers who was the formal authority who linked

researcher to the participants because they could grant or withhold access to participants depending on perceived threat. The purpose of the study was explained, and written informed consent was obtained. Interviews were conducted in private settings to ensure confidentiality and comfort. Completed questionnaires were reviewed daily for completeness and accuracy, and any errors were corrected promptly.

Quality control (Validity and Reliability)

Validity

The validity of the questionnaire was determined using Content Validity Index (CVI). The questionnaire was submitted to three research experts to evaluate the relevance, clarity, and suitability of the items against a 4-point rating scale. The Content Validity Index (CVI) was calculated by dividing the number of items rated as relevant (3 or 4) by the total number of the set items. A CVI of 0.84 was obtained after calculation, which exceeds the recommended minimum threshold of 0.70²¹. Therefore, the instrument was deemed highly valid for data collection.

Reliability

The questionnaires were tested using a pilot study conducted on 10% of the sample size from a neighboring ward, who were excluded from the final study. The data was analyzed using SPSS to compute the Cronbach's alpha coefficient (α). The Cronbach's alpha coefficient of 0.78 was obtained. Since this value is above the accepted threshold of 0.70^{8, 13}, the questionnaire was highly reliable and stable for consistent data collection.

Adjustments made after the pre-test, reliability, and validity tests

The reliability analysis revealed that two items under the specific variable sections had weak item-total correlations, which lowered the overall alpha score. These two poorly performing questions were removed entirely, which successfully pushed the final Cronbach's alpha to 0.78. The pre-test revealed that the survey took an average of 25 minutes to complete, which caused participant fatigue. The instrument was streamlined by removing redundant questions, successfully reducing the completion time to a concise 15 minutes.

Data management and analysis

Quantitative data analysis

Data from questionnaire were cleaned to remove missing values, inconsistencies, and outliers, then coded and entered into Statistical Package for Data Analysis (SPSS) version 26.0. Descriptive

statistics such as frequencies, means, and percentages were used to summarize participants' characteristics. A multiple logistic regression was done at a significance level of 0.05 to test if there was a relationship between dependent and the independent variables.

Qualitative data analysis

All the audio recordings were transcribed verbatim and translated into English by the researcher and research assistants who were fluent in Runyankore. Transcripts were cross-checked to ensure accuracy of the original content, and any discrepancies were addressed by consensus between the researcher and the research assistants. Thematic analysis was used to analyse findings. To become familiar with the data, the lead researcher also listened to interview recordings and reread detailed interview notes and transcripts. Inductive, open coding of notes and transcripts was then used to identify important features in the data. Codes were collated into themes and sub-themes, which was reviewed by the field supervisor who had expertise in qualitative health research.

Results

Socio-demographic factors of the study participants

As presented in Table 1, the largest proportion 42(42.0%) of participants respondents fell within the age bracket of 31 to 45 years as compared to those aged 46 to 65 years which constituted the remaining 20(20.0%). Majority 65(65.0%) of the participants were either married or cohabiting whereas the least 17(17.0%) participants were single. A half of the study participants 50(50.0%), had completed only a primary school level of education meanwhile only a small minority of 9(9.0%) had attained a tertiary or university level of education. In addition, the largest Christianity group dominated was Anglican 47(47.0%) as compared to Muslim participants which represented

the smallest religious subset at 5(5.0%). The economic landscape was heavily dominated by peasant farming at 57(57.0%), whereas only 17(17.0%) held formal, salaried employment.

Uptake of cervical cancer screening

According to the finding in Figure 1 below, it was found that only 18(18.0%) of the study participants had ever undergone cervical cancer screening in their lifetime, while the majority 82(82.0%) had never undergone cervical cancer screening.

Bivariate and multivariate logistic regression analysis of socio-demographic factors hindering the uptake of cervical cancer screening services among participants

The results in Table 2 indicate that, Women aged 31–45 were more than three and a half times more likely to have ever screened for cervical cancer compared to those aged 21–30 (AOR = 3.54, $p = 0.031$). Conversely, older women aged 46–65 years did not exhibit a statistically significant association with screening utilization. Married or cohabiting women were 58% less likely to have ever undergone cervical cancer screening compared to the single participants (AOR = 0.42, $p = 0.038$). Women who attained a secondary-level education were nearly five times more likely to get screened compared to those with primary schooling or no formal education (AOR = 4.92, $p = 0.024$). This increased exponentially among women with tertiary or university qualifications, where they were fourteen times more likely to screening utilization than the reference category (AOR= 14.20, $p < 0.001$). Participants who earned salary or had a formal employment had an increased odds of undergoing cervical cancer screening fivefold compared to working as a peasant farmer (AOR = 5.11, $p = 0.029$).

Individual related barriers of the uptake of cervical cancer screening services

Table 3 below, the barriers reported by the participants who had never undergone cervical cancer screening (N = 82). The study found that majority 57(69.0%) of the unscreened participants agreed that they lack adequate information concerning cervical cancer as compare to only 18(22.1%) who disagreed with this statement. More than half of the unscreened women 45 (54.9%) agreed that they didn't screen due to the fear that the screening process is painful. Conversely, 22(27.4%) disagreed that pain was a deterrent. About 51(62.5%) of the participants agreed that the fear of testing positive for cancer actively stops them from getting screened. On the other hand, only 21(26.0%) disagreed with this fear. Nearly half 40(48.2%) of the unscreened women agreed that their husband's or partner's disapproval was a direct hindrances to seeking the test. Meanwhile, 27(33.1%) reported that spousal disapproval was not a factor.

Health system-related factors hindering the uptake of cervical cancer screening services by study participants

According to Table 4 below, more than half 53(53.0%) of the participants agreed that the long distance to the screening health facility acts as a major barrier, conversely, 37(37.0%) disagreed that distance was an issue. Majority 71(71.0%) of the women agreed that long waiting hours at the clinic actively discourage them from accessing screening services whereas only 20(20.0%) disagreed with this statement. A significant proportion 61(61.0%) of the participants agreed that having male health workers perform the procedure causes extreme discomfort and stops them from seeking care meanwhile, only 26(26.0%) disagreed that provider gender was a barrier. Nearly half 49(49.0%) of the respondents agreed that frequent shortages of testing supplies and essential chemical reagents hinder screening uptake. On the other hand, 26(26.0%) disagreed that stock outs were a challenge.

Bivariate and multivariate logistic regression analysis of health system-related factors hindering the uptake of cervical cancer screening services by study participants

According to Table 5 below, women who lived close to the health facility were three times more likely to utilize screening services compared to those facing long distances (AOR = 3.10, $p = 0.044$). Women who disagreed that male workers performing the test was a barrier were more than four and a half times more likely to have ever undergone cervical cancer screening compared to those who reported discomfort with male examiners (AOR = 4.64, $p = 0.013$).

This study showed that consistent availability of testing supplies significantly favored screening history, though it did not reach statistical significance (AOR= 2.50, $p = 0.141$). This indicates that availability of testing supply is heavily confounder variables. The study also found that disagreeing that long waiting hours were a deterrent was not a statistically significant independent predictor of screening utilization (AOR = 2.88, $p = 0.072$).

Facilitators of cervical cancer screening uptake among study participants

As shown in Figure 2, the most prominent facilitator was knowing someone who had suffered from cervical cancer as agreed by majority 15(83.3%) of screened women. This was closely followed by 14(77.8%) of the women who agreed that receiving good information from health workers during antenatal care motivated them. As well as 10(55.6%) of the screened women agreed that agreed that active encouragement from local religious or community leaders served as a primary driver for

their clinical attendance. Furthermore, the least (3.5%), of the study participants agreed that the affordability of the screening services at the public health facility motivated them to be screened.

Focus Group Discussion (Qualitative triangulation and synthesis)

The qualitative data were gathered through Focus Group Discussions. This allowed for the triangulation of community perspectives, by investigating the depth of cervical cancer screening knowledge, misconceptions about physical pain, diagnostic technique, facilitators, and male partner approval

Theme 1: Knowledge deficit about cervical cancer screening

Sub-theme 1.1: Misconception of cervical cancer screening as a reactive rather than preventive measure

Narrative explanation

There is a wide community misunderstanding regarding the purpose of cervical cancer screening. This belief treats screening as a reactive diagnostic tool for active illness, rather than a proactive, preventive intervention for asymptomatic individuals.

Verbatim quote

"In this community, we only talk about cancer when someone has lost weight, and is bleeding continuously. We lack the understanding that a healthy-looking woman can walk into the hospital and be tested to stop a disease that hasn't shown up yet." FGD, Participant No. 03 (43-year-old peasant farmer)

Interpretation

This narrative highlights how a lack of health literacy transforms into a dangerous behavioral barrier. Therefore, education campaigns must actively decouple screening from illness and frame it clearly as a routine check wellness measure.

Theme 2: Fears that women have about the tools used during cervical cancer screening

Sub-theme 2.1: Exaggerated community rumors and gossip regarding speculum insertion

Narrative explanation

The physical process of cervical screening is heavily stigmatized by highly exaggerated community rumors. In the absence of formal clinical explanations, the community is filled with a terrifying

narratives. The speculum is routinely described as a destructive, harmful weapon rather than a routine medical instrument, creating panic among eligible women.

Verbatim quotes

"We hear from our neighbors that they insert a big, cold metal iron inside you that tears your flesh. This scares many of us away from the hospital unless someone is already bleeding or very sick."

— FGD, Participant No. 01 (34-year-old mother)

"The whispers in our villages are terrifying. Women tell us that the doctors use a cold metal iron instrument that is forcefully twisted inside your private parts, leaving you torn and bleeding. This neighborhood gossip causes severe panic. If you are not sick, why would you volunteer for such torture?"— FGD, Participant No. 11 (31-year-old woman)

Interpretation

This illustrates how peer-to-peer misinformation about the speculum, transforming a minor physical discomfort into a perception of clinical torture.

Sub-theme 2.2: The effect of missing midwife communication regarding the procedure

Narrative explanation

The anxiety surrounding the physical coldness of the screening tools is significantly contributed by a lack of clear communication from healthcare providers. When health workers fail to offer step-by-step guidance before a pelvic exam, the fear grows, driving women away from health facilities back to their daily routines.

Verbatim quote

"Women whisper that the metal instrument doctors use is wide, freezing cold, and cuts through your delicate internal areas. Without clear explanation from a midwife, that fear alone makes you stay at your farm."— FGD Participant, 52-year-old business woman

Interpretation

This indicates that the barrier is not merely the tool itself, but the cold, uncommunicative clinical environment in which it is utilized.

Theme 3: Traditional beliefs that stop women from being screened for cervical cancer

Sub-theme 3.1: Violations of traditional Ankole privacy norms by male clinicians

Narrative explanation

Socio-cultural norms regarding female bodily privacy present a major institutional barrier to screening access. Within the local Ankole cultural context, a woman's reproductive anatomy is strictly private and reserved solely for her husband. Exposing these private areas to healthcare provider's particularly male clinicians or nurses induces shame and cultural guilt, forcing many women to abandon the screening process.

Verbatim quotes

"In our Ankole culture, a woman's body is strictly private and reserved exclusively for her partner. When a woman leaves her village, enters the screening room, and finds a young male clinician or nurse preparing the instruments, she experiences overwhelming shame. Most women immediately walk away without getting tested. They would rather protect their modesty than receive a medical check from a man."— FGD, Participant No. 06 (29-year-old Mother)

"In our culture, a woman's body is highly private. When you travel all the way to the facility and find a young male nurse or doctor on duty conducting the screening, you feel ashamed. Many women just turn around and walk back home."— FGD Participant, 28-year-old trader

Interpretation

The data underscore a critical disconnect between health facilities staffing and community cultural values. To optimize uptake, clinics must offer women the explicit choice of female providers or organize female-led screening camps.

Theme 4: Husband's/partners approval for cervical cancer screening

Sub-theme 4.1: Financial dependence and husband-led mobility sanctions

Narrative explanation

The decision-making autonomy of women regarding their reproductive health is heavily restricted by patriarchal structures. Furthermore, a woman's attempt to seek a pelvic exam without obtaining permission triggers deep marital suspicion, with husbands frequently misinterpreting the visit as a sign of marital immodesty.

Verbatim quotes

"You cannot just wake up and go for a vaginal exam without your husband asking what you are looking for. They suspect you are either unfaithful or going to expose yourself to male doctors. Since he holds the money for transport, his disapproval stops everything."— FGD Participant, 29-year-old peasant farmer

"You cannot simply leave your home to go for a private vaginal examination without explicit clearance from your husband. Men here are highly suspicious; they immediately accuse you of infidelity or believe you are going to display your nakedness to male medical workers for malicious reasons. Because the husband controls the money for transport, his disapproval blocks you immediately."— FGD, Participant No. 18 (48-year-old employed)

Interpretation

This theme highlights that targeting screening campaigns exclusively at women is structurally insufficient. A woman's motivation to get screened can be completely neutralized by a husband's accusations of infidelity. Therefore, cervical cancer advocacy must actively engage men, framing screening not as an invasive threat to marital fidelity, but as a vital health intervention to protect the mother of the family.

Table 1: Showing the socio-demographic factors of the study participants

Variables	Frequency (N)	Percentage (%)
Age Group (Years)		
21–30	38	38.0
31–45	42	42.0
46–65	20	20.0
Marital Status		
Married/Cohabiting	65	65.0
Single	17	17.0
Widowed/Divorced	18	18.0
Education Level		
No Formal Education	13	13.0
Primary	50	50.0
Secondary	28	28.0
Tertiary/University	9	9.0
Religious Affiliation		
Anglican	47	47.0
Catholic	38	38.0
Muslim	5	5.0
Born again	10	10.0
Employment Status		
Peasant Farmer	57	57.0
Small-scale Trader	26	26.0
Salaried/Formal Employment	17	17.0

Table 2: Bivariate and multivariate logistic regression analysis of socio-demographic factors hindering the uptake of cervical cancer screening services among participants

Variables	Cervical cancer screening uptake		COR (95% CI)	(AOR) (95% CI)	p-value
	Ever Screened N (%)	Never Screened N (%)			
Age Group (Years)					
21–30	4(10.5)	34(89.5)	1.00 (Ref)	1.00 (Ref)	—
31–45	11(26.2)	31(73.8)	3.02 (0.87–10.43)	3.54 (1.12–11.18)	0.031*
46–65	3(15.0)	17(85.0)	1.50 (0.31–7.31)	1.22 (0.24–6.22)	0.810
Marital Status					
Single/Divorced/Widowed	8(22.9)	27(77.1)	1.00 (Ref)	1.00 (Ref)	—
Married/Cohabiting	10(15.4)	55(84.6)	0.61 (0.22–1.71)	0.42 (0.13–0.94)	0.038*
Highest education level					
Primary or Below	4(6.5)	58(93.5)	1.00 (Ref)	1.00 (Ref)	—
Secondary	8(28.6)	20(71.4)	5.80 (1.61–20.89)	4.92 (1.23–19.64)	0.024*
Tertiary/University	6(60.0)	4(40.0)	21.7 (4.81–98.34)	14.2 (2.85–70.81)	<0.001*
Employment Status					
Peasant Farmer	6(10.5)	51(89.5)	1.00 (Ref)	1.00 (Ref)	—
Small-scale Trader	5(19.2)	21(80.8)	2.02 (0.57–7.21)	1.85 (0.43–7.96)	0.411
Formal Employment	7(41.2)	10(58.8)	5.95 (1.68–21.05)	5.11 (1.18–22.12)	0.029*

* Statistically significant associations, COR: Crude Odd Ratio, AOR: Adjusted Odd Ratios, p-value

Table 3: Individual related barriers of the uptake of cervical cancer screening services

Variables	Frequency (N)	Percentage (%)
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Lack adequate knowledge about cervical cancer		
Agree	57	69.0
Neutral	7	8.9
Disagree	18	22.1
Fear that the screening process is painful		
Agree	45	54.9
Neutral	15	17.7
Disagree	22	27.4
Fear testing positive for cancer		
Agree	51	62.5
Neutral	10	11.5
Disagree	21	26.0
Husband/partner disapproval of the test		
Agree	40	48.2
Neutral	15	18.8
Disagree	27	33.1

Table 4: Health system-related factors hindering the uptake of cervical cancer screening services by study participants

Variables	Frequency (N)	Percentage (%)
Long distance to the health facility		
Agree	53	53.0
Neutral	10	10.0
Disagree	37	37.0
Long waiting hours at the clinic		
Agree	71	71.0
Neutral	9	9.0
Disagree	20	20.0
Male health workers performing the test		
Agree	61	61.0
Neutral	13	13.0

Disagree	26	26.0
Frequent shortage of testing supplies/reagents.		
Agree	49.0	49.0
Neutral	25.0	25.0
Disagree	26.0	26.0

Table 5: Bivariate and multivariate logistic regression analysis of health system-related factors hindering the uptake of cervical cancer screening services by study participants

Variables	Cervical cancer uptake		COR	AOR	p-value
			(95% CI)	(95% CI)	
	Ever screened N (%)	Never screened N (%)			
Distance to Health facility					
Agree	5(9.4)	48(90.6)	1.00 (Ref)	1.00 (Ref)	—
Disagree	13(27.7)	34(72.3)	3.67 (1.21–11.14)	3.10 (1.03–9.34)	0.044*
Long waiting hours					
Agree	9(12.7)	62(87.3)	1.00 (Ref)	1.00 (Ref)	—
Disagree	9(31.0)	20(69.0)	3.10 (1.12–8.56)	2.88 (0.91–9.12)	0.072
Male workers conducting test					
Agree	6(9.8)	55(90.2)	1.00 (Ref)	1.00 (Ref)	—
Disagree	12(30.8)	27(69.2)	4.07 (1.41–11.75)	4.64 (1.38–15.62)	0.013*
Testing supply stock-outs					
Agree	5(10.2)	44(89.8)	1.00 (Ref)	1.00 (Ref)	—
Disagree	13(25.5)	38(74.5)	3.01 (1.00–9.09)	2.50 (0.74–8.41)	0.141

* Statistically significant associations, COR: Crude Odd Ratio, AOR: Adjusted Odd Ratios, p-value

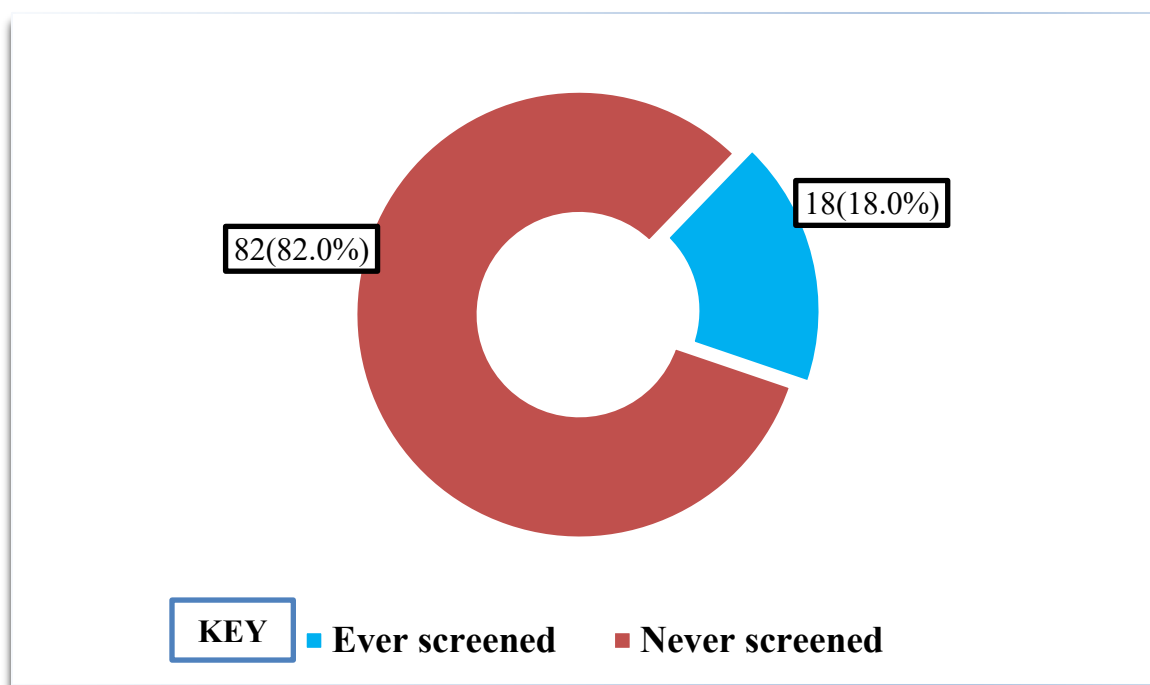


Figure 1: Uptake of Cervical Cancer Screening

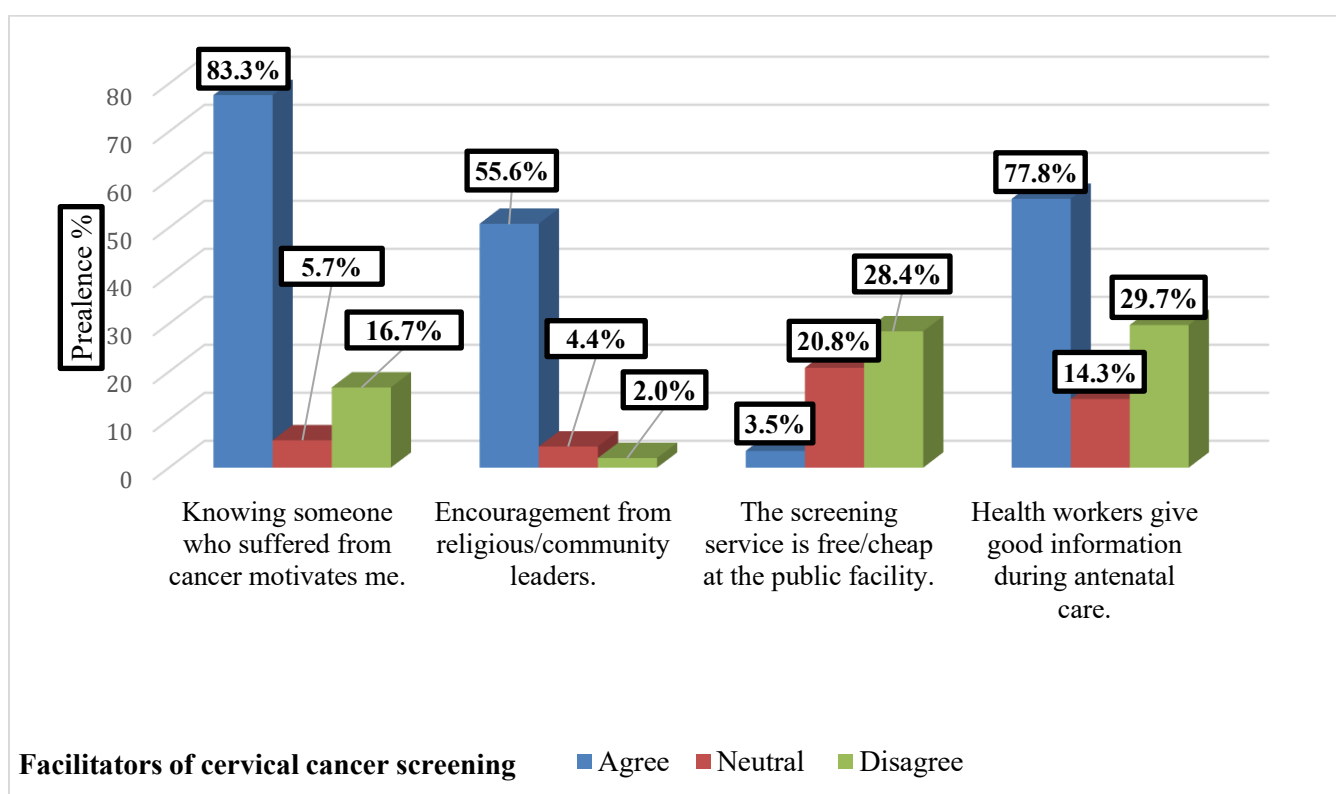


Figure 2: Facilitators of cervical cancer screening uptake among study participants

Discussion

Socio-demographic/individual-level barriers of the uptake of cervical cancer screening services by study participants.

According to this study, it was found out that participants aged 31–45 years were three and a half times more likely to have ever screened compared to younger women aged 21–30 years and older women aged 46–65 years which showed no statistically significant association with screening utilization. The marked increase in cervical cancer screening uptake in this age groups could be due to their reproductive activeness, increasing their exposure to routine family planning, antenatal care, and postnatal care clinics where cervical cancer education occurs. This was supported by ⁴⁷ where they found that younger women frequently misperceive cervical cancer as a disease leading to low clinical motivation to seek testing. On the other hand, this study finding also matches the findings from ²⁴ where they found no statistical significance among older women (46–65 years) attributed to the fact that post-menopausal women do misconceive that cervical cancer only threaten women who are actively bearing children.

It also strongly aligns with empirical findings from ¹⁹ demonstrated that the odds of cervical cancer screening were significantly higher among women aged 31–49 years compared to younger individuals under 30. This is further supported by ⁶ in an analysis of South African demographic data, which revealed that the mean age of screening uptake was 40.8 years. Similarly, in East African settings like Ethiopia, ²⁸ found that women in their thirties were 4.58 times more likely to undergo screening than those aged 21–29. This age-based disparity can be explained by differences in behavioral maturity, clinical exposure, and personal risk perceptions, women aged 35–49 have significantly more cumulative interactions with formal health systems primarily through antenatal care, postnatal care, child immunization services, and chronic family care than younger women aged 25–34 ^{10, 15}. These repeated clinical visits provide vital, opportunistic exposure to health awareness campaigns and direct midwife counseling ⁴⁸.

In this study, it was found that participants with secondary schooling were nearly five times more likely to get screened as well as those with tertiary qualifications were fourteen times more likely to utilize screening services than those with primary or no formal education. It was also revealed that participants who were employment experienced a fivefold increase in screening odds compared

to those working as peasant farmers. This could be due to the fact that women with low literacy struggle to understand the messages being given to them and are also highly vulnerable to village rumors and health misconceptions as well as participants who were peasant farmers face an intense financial barrier, forcing them to prioritize immediate household survival over preventative diagnostic screening as was also revealed by ³⁵. ⁴⁷ observed that employed women display significantly higher screening uptake because their reliable income shields them from the indirect costs of healthcare. Similarly, ² noted that formal, stable employment drives a pro-rich inequality gap, leaving lower-income women systematically marginalized from preventive oncology. This is further supported by ^{22 & 6}, who proved that possessing a non-poor wealth index significantly boosts the odds of getting screened.

As ^{11, 20 & 42} noted that women with higher household consumption expenditure and independent financial resources can easily overcome cost-related barriers, including transport expenses and facility fees. This economic strain is compounded by low health literacy.

According to this study, it was also found that married or cohabiting women were 58% less likely to have ever undergone screening compared to single participants. This could be due to the fact that male partners hold authority over household financial resources and healthcare decisions. This finding was supported by a study conducted by ⁴³. This opposes the findings from ^{10, & 15} where they indicated that married women or those in stable unions enjoy higher screening rates, driven by emotional support, shared household income, and collaborative healthcare decisions.

This study also found that 69.0% of unscreened participants lacked adequate information concerning cervical cancer, 54.9% believed the screening process would be painful, 62.5% reported that the fear of testing positive actively stopped them from seeking testing. These findings are strongly reinforced by the participants' insights gathered during Focus Group Discussions as reflected in Theme 1 & 2. These narratives showed that women feel that a diagnosis will bring only psychological trauma, prompting them to avoid the clinic entirely unless severe, visible clinical symptoms like unmanageable vaginal bleeding occur as was also mirrored by ¹.

These findings demonstrate that an informational vacuum directly fuels psychological resistance to care. This mirrors the findings from a cross-sectional assessment in Ethiopia, by ⁴² where they observed that a basic lack of disease awareness was the primary reason behind low clinical screening rates. It also agrees, with the findings from a meta-analysis across sub-Saharan Africa by

¹⁴ proved that having accurate knowledge about cervical cancer increases screening uptake by nearly five times. In addition, ^{33 & 39} also noted that women frequently view cancer as an automatic, agonizing death sentence. Because they believe a positive diagnosis is untreatable and will lead to severe emotional suffering, they choose clinical avoidance as a coping mechanism. However, as ⁴ establish, women who successfully overcome these informational and psychological barriers are 4.39 times more likely to seek screening than those paralyzed by fear.

Health system-related factors associated with the uptake of cervical cancer screening services by study participants.

According to this study, it was found that women living close to a health facility were three times more likely to utilize screening services than those facing long distances. Long distances require women to dedicate substantial time and money to travel, which presents a major challenge for subsistence farmers, hence is highly unlikely to travel again limiting them from undergoing cervical cancer screening as was explained by ⁴⁴. This finding also aligns with the finding from a study conducted in rural Namibia, by ³⁰ where he observed that cervical cancer screening services are often confined to district hospitals, leaving remote, hard-to-reach communities with little to no outreach options. Also, a systematic review of low- and middle-income countries by ^{7 & 41} similarly identified physical distance to clinics as an immediate systemic barrier. However, ⁵, also noted that distance functions as a financial burden rather than just a logistical inconvenience.

A large majority of participants (71.0%) agreed that long waiting hours at the clinic discouraged them from accessing screening services. However, it was not a statistically significant independent predictor of screening utilization. This lack of independent statistical significance indicates that waiting times act as an institutional confounder, compounding other barriers. This is supported by a global scoping review by ¹⁸, which found that while integrating screening into regular outpatient care can improve access, it is often undermined by institutional issues, including heavy staff workloads, limited room capacity, and long waiting times.

The study found that nearly half of the respondents agreed that frequent shortages of testing supplies and essential chemical reagents hindered screening utilization but did not reach independent statistical significance. This lack of direct statistical significance suggests that supply chain reliability operates as a complex confounding variable. This mirrors the findings from ^{12 & 44}, where

they noted that if a woman overcomes financial, distance, and cultural barriers to visit a clinic only to be turned away due to a shortage of acetic acid or speculums, she is unlikely to return.

According to this study, it was found that women who disagreed that male examiners were a barrier were more than four and a half times more likely to have ever undergone screening. This aligns with the findings from ²⁵, where they found that medical environment triggers feelings of cultural shame and exposure hence, women choose to protect their community status. In this study, it was found that women who disagreed that male examiners were a barrier were more than four and a half times more likely to have ever undergone cervical screening compared to those who reported discomfort with male clinicians. It also, matches qualitative insights from the study, where women noted that having a young male clinician or nurse present caused overwhelming shame, leading many to leave without getting tested as was noted by ^{36, 23 & 38}.

Facilitators of cervical cancer screening uptake among study participants.

This study highlighted that the affordability of services at the public facility was most prominent facilitator identified by the participants as agreed by 83.3% of the screened women. This is because user fees charges act as a major deterrent to preventative healthcare utilization. This was mirrored by ^{3 & 35}. Though it contradict the finding from ⁴⁴ where they noted that free clinical services are still constrained by indirect expenses, such as the costs of geographic transport and long travel times.

According to this study, it was revealed that experiential peer influence, with 77.8% of the women agreeing that knowing someone who had suffered from cervical cancer personally motivated them to get tested. This could be attributed to that fact that participants' vulnerability to an asymptomatic disease increases significantly when they witness a close peer or relative experience that illness as was observed by ^{47 & 1}.

This study also found that 55.6% of the screened women agreed that receiving information from healthcare workers during routine antenatal care (ANC) visits directly facilitated their screening. This finding confirms the findings from ^{17 & 31}, where they revealed that when a midwife provides routine pregnancy checkups and introduces screening education, it eliminates the structural need for women to schedule separate appointments. This helps overcome barriers related to long travel

distances and limited time, ensuring that young, sexually active women are reached during their peak reproductive years ²⁴.

Finally, exactly half of the screened participants agreed that active encouragement from local religious or community leaders served as a primary driver for their clinical attendance. This finding demonstrates the profound influence of traditional and spiritual leaders helps in shaping health-seeking behaviors as was revealed by ²⁷. This was also supported by ^{25 & 43} where they stated that health facilities that fail to include religious and community leaders will struggle to overcome cultural anxieties.

Recommendations

- I recommend that the health facility administrators especially health centers III and IV must deliberately schedule female midwives and nurses to lead cervical cancer screening units.
- The Ministry of Health should establish integrated clinical guidelines incorporating the cervical cancer screening education into routine antenatal care, postnatal care, and family planning clinics.
- I also recommend that the public health departments should launch community-based health campaigns focusing on reframing cervical cancer screening as a protective family health measure, rather than an invasive reproductive examination.
- I recommend that health workers should partner directly with local church leaders in order to effectively deliver accurate scientific information during services, which may help alleviate village.
- I recommend a qualitative study which may help in exploring the perspectives of male partners regarding cervical examinations to design better male-involvement interventions.

Conclusion

On conclusion, only very few participants had undergone cervical cancer screening. The screening uptake barriers was heavily stratified by younger women (21–30 years), older women (46–65 years), and subsistence peasant farmers where they face severe inequities, leaving them disproportionately vulnerable to undetected cervical pathologies. Conversely, formal employment and advanced education operate as massive, independent facilitators of health-seeking behavior. In addition, spousal disapproval and the requirement for partner permission, institutional reliance on male clinical examiners which creates severe psychological distress, shame, and clinical avoidance

among rural women, which actively drives down screening rates. As well as long travel distances, and long clinic waiting times. These deficiencies create an unreliable health environment that discourages women from seeking preventative care. Therefore, integrating screening education into routine antenatal care, and eliminating service fees, are highly effective methods for successfully increasing screening uptake among rural populations.

Study Limitations

- The quantitative sample was limited to 100 participants recruited from a single rural community, which may limit the generalizability of the findings to broader areas.
- There is a possibility of potential biasness since screening history was gathered via participant self-reports rather than through verification of institutional medical records.
- The qualitative focus groups involved a small subset of participants, which may not capture the full perspectives or lived experiences found across different groups within the district.

List of abbreviations

AIDS:	Acquired Immune Deficiency Syndrome
CDC:	Center for Disease Control
CIN:	Cervical Intraepithelial Neoplasia
FGD:	Focus Group Discussion.
HBM:	Health Belief Model
HCW:	Health Care Worker
HIV:	Human Immunodeficiency Virus
HPV:	Human Papillomavirus
LMICs:	Low- and Middle-Income Countries
MOH:	Ministry of Health
NCDs:	Non-Communicable Diseases
SDGs:	Sustainable Development Goals
STI:	Sexually transmitted Infection
UNAIDS:	The Joint United Nations Programme on HIV/AIDS
VIAC:	Visual Inspection with Acetic acid and Cervicography
WHO:	World Health Organization

Declaration

Ethical approval and consent to participate

Ethical approval for this study was obtained from the Mountains of the Moon University Department of Nursing and Midwifery Institutional Research Review Committee. Administrative clearance was also secured from the Town Clerk of Kitagata Town Council and the local LC1 chairpersons. All human-subject experiments and procedures were performed in strict accordance with relevant guidelines and regulations of Helsinki. Participation in this study was entirely voluntary, and participants were informed that they could withdraw at any point without any consequences. The informed consent process was conducted individually in a private setting to ensure privacy. Participants received a comprehensive information sheet detailing the study's purpose, procedures, benefits, and potential risks. The researcher read and explained this information in each participant's preferred local language. Prior to data collection, all participants provided written informed consent, which was signified by either a signature or a thumbprint. To strictly maintain participant privacy, a confidentiality coding system was implemented. Personal identifiers, such as names and phone numbers, were completely omitted from all data collection tools and replaced with unique participant identification codes. Information delivery and data management occurred individually in a private setting within a restricted-access office. Finally, hardcopy completed questionnaires were stored securely in a locked filing cabinet, while digital datasets were password-protected and saved on a secure server to prevent unauthorized access.

Consent for publication

Not applicable

Competing interest

No, we declare that the authors have no competing interests or other interests that might be perceived to influence the results and/or discussion reported in this paper.

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Availability of data and materials

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Author contributions

AG: Study design and initial manuscript draft preparation; KH: Conceptualizing, Data collection and manuscript writing support; ALG: Editing the manuscript and data collection and data interpretation; EK: Data curation and initial draft of the manuscript to the final form. OC: Edited the final copy of the Manuscript. All authors reviewed the manuscript and approved the final version of the manuscript.

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