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# Knowledge, Attitude and uptake of Cervical Cancer Screening among HIV Positive Women Visiting Kampala International University Teaching Hospital

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## ABSTRACT

The study aimed to evaluate the knowledge, attitude, and uptake of cervical cancer screening among HIV-positive women visiting Kampala International University Teaching Hospital (KIUTH). A quantitative cross-sectional study was conducted to assess factors associated with the uptake of cervical cancer screening among HIV-positive women at KIUTH. Data was collected using an interviewer-administered questionnaire. The results showed that 40% of HIV-positive women had undergone cervical cancer screening. Increased nationwide advocacy, media attention, community sensitization, and improved access to screening centers may contribute to this increase. Differences in socio-demographic characteristics, economic standing, and promotional policies may be contributing factors. The unequal distribution of institutions offering screening services may also be a factor in the decline in screening usage. The study found that lack of awareness and absence of symptoms were the two most common reasons for not getting a cervical cancer screening. Educated women are more effective in producing health and education, motivation, and self-efficacy in the pursuit of health treatments Respondents with spousal support had a five-fold higher probability of getting a cervical cancer screening than those without partner support. Respondents who received an HIV diagnosis five years or more ago had a four-fold greater likelihood of using a screening service than those who had an HIV diagnosis within the previous five years. In conclusion, the study found that increasing utilization of screening services was connected with having a positive attitude regarding cervical cancer and its screening.

**Keywords:** cervical cancer, HIV, Spouse support, screening, symptoms

## INTRODUCTION

Today, the perception of diseases has shifted from infectious to chronic diseases, with one of the most significant being cancer. In 2003, cancers caused the deaths of 1.5 million people worldwide. Unfortunately, despite significant advancements in medical sciences, therapeutic methods for cancers are not yet sufficiently effective, and the economic burden of these diseases is very heavy [1]. Cervical cancer, caused predominantly by the human papillomavirus (HPV), is a cancer of the cervix, the organ connecting the uterus and the vagina. Effective interventions for preventing HPV infections can, therefore, prevent cervical cancer. Despite its preventable nature, globally, cervical cancer is considered the third most common form of cancer among women after breast and colorectal cancer [2]. Women in poorer communities are particularly affected by the disease and cervical cancer deaths occur majorly in developing countries [2]. The age-standardized incidence rate for cervical cancer has been increasing, from 17.7/100,000 women person-years in the early 1960s to 47.5/100,000 women person-years in 2008, making it one of the highest in the world [3]. In Uganda, an estimated 73.6% of women in the general population harbor human papillomavirus, a necessary cause of cervical cancer, and 44 per 100,000 women develop cervical cancer every year. With 3915 women diagnosed with cervical cancer annually, Uganda is ranked 14th among countries with the highest incidence rates [4]. Despite the heavy burden of the disease, cervical cancer is one of the most easily preventable cancers among women [5]. Approximately 36.7 million people worldwide were living with HIV by 2002. Of these, 52% lived in sub-Saharan Africa [6]. By 2007, nearly 33.2 million people worldwide were infected with HIV, with 63% of the cases from sub-Saharan Africa. In 2019, 38 million people were living with HIV, and around 690,000 people died from AIDS-related illnesses worldwide [7]. Once considered a terminal illness with an average life expectancy of 10 years, HIV infection is now considered a chronic disease, primarily due to advances in treatment [7]. Common comorbidities in HIV-infected patients include cancers, hepatitis C virus infection, hypertension, coronary artery disease, and dyslipidemia [3].

Several studies have revealed that women living with human immunodeficiency virus (HIV) have a higher prevalence of HPV infection, along with infection with multiple high-risk HPV types [8]. A study evaluating

cervical screening techniques in Uganda found that HIV-infected women had a higher prevalence of cervical intraepithelial neoplasia grade 2+ than uninfected women (12.9% vs. 1.7%, respectively) [9]. Given these facts, the World Health Organization (WHO) recommends a more aggressive cervical cancer screening and treatment schedule for HIV-positive women than for HIV-negative women. This scheduling of cervical cancer screening according to HIV status implies that women should be screened for HIV within cervical cancer programs [3]. Adhering to the recommended screening guidelines and being immunized per CDC guidelines are important strategies to lower personal risk of cervical cancer, according to the CDC. However, many women infected with HIV do not obtain the recommended Papanicolaou (Pap) testing or follow-up management, thereby increasing their risk of cervical cancer [10].



Despite WHO recommendations and available avenues for integration, HIV and cervical cancer prevention services continue to be implemented as stand-alone programs in Uganda and many other developing countries. For example, a study conducted in Nigeria among HIV-positive women attending post-HIV test counseling indicated that none of the respondents were informed about cervical cancer and its screening during the post-test counseling sessions. Similarly, a study conducted in Uganda among healthcare providers (HCPs) and policymakers affirmed that much pessimism exists regarding the feasibility of HIV and cervical cancer screening integration [3]. As clinics remain non-integrated, almost all of the HIV care programs in Uganda do not offer cervical cancer screening services. Consequently, women attending HIV clinics miss cervical cancer screening opportunities despite the frequent visits they make to the HIV clinics for medical reviews and drug replenishment. Such missed opportunities for cervical cancer screening increase women's risk of presenting late with advanced cervical cancer disease and a poor prognosis. Similarly, almost all cervical cancer screening programs in Uganda do not offer HIV screening services to women, increasing their risk of receiving inappropriate schedules for cervical cancer screening. A less aggressive cervical cancer screening schedule for HIV-positive women also increases their risk of presenting late with advanced cervical cancer and a poor prognosis [4]. A study in two districts in Eastern Uganda found that only 4.8% of women aged between 25 and 49 years had ever been screened for cervical cancer, and most had been screened owing to symptoms which they associated with cervical cancer. Symptom-based screening contributes to delays in diagnosis [11]. Another study in Northern Uganda found that most women with cervical cancer were diagnosed at stages III (45%) and IV (21%) [12]. Cervical cancer screening remains very low across several countries in Sub-Saharan Africa due to low levels of awareness, challenges with health-seeking behavior, and health system barriers [11] The purpose of this study is to assess the knowledge, attitude, and uptake of cervical cancer screening among HIV-positive women visiting Kampala International University Teaching Hospital. Cervical cancer is the second most common cancer among women globally, with an estimated 529,409 new cases and 274,883 deaths in 2008. About 86% of the deaths occur in developing countries, making it the leading cause of cancer death among women [3]. In Uganda, cervical cancer is the commonest cancer among women. Uganda has one of the highest age-standardized incidence rates of cervical cancer globally (41.7/100,000 person-years), at almost six times the rate in high-income countries, in addition to a high prevalence of human immunodeficiency virus (HIV) [14]. Studies have determined that HIV-positive women have an increased risk of developing CC compared to HIV-negative women. In view of the above, the World Health Organization (WHO) recommends a more aggressive re-screening schedule for HIV-positive women compared to HIV-negative women [4]. According to the CDC, adhering to the recommended screening guidelines and being immunized per CDC guidelines are important strategies to lower personal risk of cervical cancer. However, many women infected with HIV do not obtain the recommended Papanicolaou (Pap) testing or follow-up management, thereby increasing their risk of cervical cancer [14] and cervical cancer screening remains very low across several countries in Sub-Saharan Africa due to low levels of awareness, challenges with health-seeking behavior, and health system barriers [9]. The study aims to assess the knowledge, attitude, and uptake of cervical cancer screening among HIV-positive women visiting Kampala International University Teaching Hospital. The specific objectives include determining the knowledge of cervical cancer screening, assessing the attitude towards it, and determining the uptake of cervical cancer screening among HIV-positive women visiting the hospital.

## METHODOLOGY

### Study Design

A quantitative cross-sectional study approach was conducted to assess the factors associated with the uptake of cervical cancer screening among HIV-positive women at KIUTH.

### Study Site

The study was conducted in the gynecology OPD of KIUTH. KIU-TH is located in Western Uganda, approximately 300km from Kampala, the capital city of Uganda. The hospital is situated along the Mbarara-Kasese highway in Ishaka town, Bushenyi-Ishaka municipality, Bushenyi district. It has a catchment area of more than 1 million people and a bed capacity of 610 patients. The major services offered at KIU-TH include Surgery, Gynecology and Obstetrical care, Medicine, Dentistry, and Orthopedics.

**Study Population**

The study was conducted among HIV-positive women visiting KIUTH.

**Inclusion Criteria**

All HIV-positive women visiting KIUTH who were available at the time of data collection and willing to participate in the study.

**Exclusion Criteria**



Women who declined to participate in the study.

**Sample Size Determination**

The sample size was determined

$$n = \frac{/2)^2 p(1-p)}{e^2}$$

Where n is the required sample size, p is the approximate prevalence rate for uptake of cervical cancer screening among HIV-positive women at KIUTH, and e is the permissible error in the estimate. Until this study was conducted, there were no published data about p. So, a 50% proportion was used to get the maximum sample size by taking into account a 90% confidence interval ($Z\alpha/2 = 1.96$), and a marginal error (d) of 10%. Based on these considerations, the minimum calculated sample size was 96 respondents. The researcher was able to interview 80 respondents in this study.

**Sampling Procedure**

Simple random and purposive sampling techniques were used to choose respondents to participate in the study, from whom data was collected.

**Dependent Variable**

Uptake of cervical cancer screening

**Independent Variable**

Awareness, perception, accessibility factors of cervical cancer screening, and socio-demographic factors like age, marital status, occupation, education, religion.

**Data Collection Method and Tools**

Data was collected using an interviewer-administered questionnaire. The researcher met with the targeted respondents that took part in the study after obtaining permission for data collection from respondents. Each participant was required to give informed consent before enrolling in the study. The researcher assisted the respondents in filling the questionnaires by explaining for clarifications. The properly filled questionnaires were then collected, and the data was taken for analysis. The researcher used a structured questionnaire, and participants were asked similar questions and from options, they picked the best alternative.

**Data Entry and Cleaning**

The data in the questionnaire was checked for completeness, cleaned, and sorted to eliminate obvious inaccuracies and omissions. The data was then coded and entered into a computer.

**Data Analysis**

The qualitative data collected was statistically analyzed and documented using Microsoft Excel and Word version 2019 which were then analyzed. The analyzed data was presented in the form of tables and graphs which formed a basis for discussion and conclusions.

**Quality Control**

To ensure quality control, the researcher conducted a pre-test using 10 questionnaires in the target population, and data was collected before the actual study to help in reconstruction of the questionnaire where necessary.

**Ethical Considerations**

Participants were given information regarding the research to seek consent. Each participant's choice to participate or not was respected, and data collected from participants was kept confidential. The participants' names were not included while filling out the questionnaire to maintain privacy. It was clearly communicated that the information obtained from the participants would be kept under lock and key to only be used for research purposes.

**Study Findings**

**Socio-demographic characteristics of respondents**

In this study, 80 women in total were included. Most responders were between the ages of 25and 29. About51% of those polled had two or more children. 44 percent of the respondents have completed post-primary schooling. The majority of respondents (89 percent) lived in towns, and35% of them were self-employed. The majority of

respondents (54%) stated that their average monthly salary was less than 1 million UGX. More than half of respondents (71%) reported having ever been married Table 1.

**Table 1: Socio-demographic characteristics of HIV positive women**

| Variable | Screened for Cervical cancer | | |
|---|---|---|---|
| | **Yes** | **No** | **Total** |
| Age | | | |
| <=24 | 5 | 8 | 13 |
| 25–29 | 6 | 17 | 22 |
| 30–34 | 3 | 5 | 8 |
| 35–39 | 9 | 8 | 18 |
| >=40 | 9 | 10 | 19 |
| Residence of respondents | | | |
| Urban | 29 | 41 | 70 |
| Rural | 3 | 7 | 10 |
| Parity | | | |
| <2 | 13 | 26 | 39 |
| ≥ 2 | 19 | 22 | 41 |
| Educational level | | | |
| No formal education | 2 | 12 | 14 |
| Primary | 7 | 24 | 31 |
| Secondary+ | 23 | 12 | 35 |
| Marital Status | | | |
| Never Married | 9 | 15 | 23 |
| Ever married | 23 | 33 | 57 |
| Occupational Status | | | |
| Unemployed | 1 | 4 | 4 |
| Civil servant | 9 | 5 | 14 |
| Private employ | 4 | 9 | 13 |
| Self employed | 11 | 15 | 26 |
| Housewife | 4 | 9 | 13 |
| Daily laborer | 2 | 5 | 7 |
| Others | 0 | 1 | 2 |
| Average monthly income | | | |
| <1M | 12 | 31 | 43 |
| 1M–2M | 9 | 9 | 18 |
| >2M | 11 | 8 | 19 |



**Knowledge about Cervical Cancer and its Screening among Respondents**

Thirty (38%) of the respondents agreed that having STDs increased the chance of acquiring cervical cancer. However, several respondents (about 25%) were unaware of the risk factors for cervical cancer. The results also showed that while over one-third of respondents (38%) did not know the symptoms of cervical cancer, 41% of respondents noted that pelvic discomfort is a sign and symptom of the disease. Nearly half of respondents (47%) identified cervical cancer screening, followed by respondents who listed regular condom usage (33%) as a technique of preventing cervical cancer, while a sizable portion of respondents (26%) did not know of any such strategy. The majority of responders (85%) were unaware of the procedure for detecting cervical cancer. A total of

51 respondents—64 percent—mentioned early diagnosis as a benefit of cervical cancer screening, whereas just one respondent—1 percent—mentioned a lower risk of abortion (Table 2). When we look at the total level of respondents' knowledge, only 17% of women properly identified three or more cervical cancer preventive strategies, compared to 23% of women who correctly identified three or more risk factors (Fig. 1).

**Table 2: Knowledge items responses of HIV positive women**



| **Knowledge items** | | **Frequency** | **Percentage** |
|---|---|---|---|
| Risk factors | Unsafe sexual practice | 31 | 39 |
| | Sexually transmitted infections | 30 | 38 |
| | Having multiple sexual partner | 23 | 28 |
| | Smoking | 16 | 21 |
| | Early sexual activity | 11 | 14 |
| | Prolonged use of oral contraceptive | 3 | 3 |
| | Do not know | 20 | 25 |
| Sign and symptoms of Cervical cancer | Pelvic pain | 33 | 41 |
| | Foul smelling vaginal discharges | 32 | 40 |
| | Post coital bleeding | 17 | 22 |
| | Lengthy menstruation | 11 | 14 |
| | Pain during sex | 6 | 7 |
| | Inter menstrual bleeding | 3 | 3 |
| | Do not know | 30 | 38 |
| Prevention methods | Cervical cancer screening | 38 | 47 |
| | Consistent condom use | 27 | 33 |
| | Treatment of STIs | 14 | 18 |
| | Reduce sexual partner | 14 | 17 |
| | Late marriage | 7 | 9 |
| | Vaccination | 3 | 4 |
| | Do not know | 21 | 26 |
| Benefit of screening | Early detection | 51 | 64 |
| | Early treatment | 21 | 26 |
| | Early diagnosis | 14 | 18 |
| | Decreasing chances of an abortion | 1 | 1 |
| | Do not know | 11 | 13 |

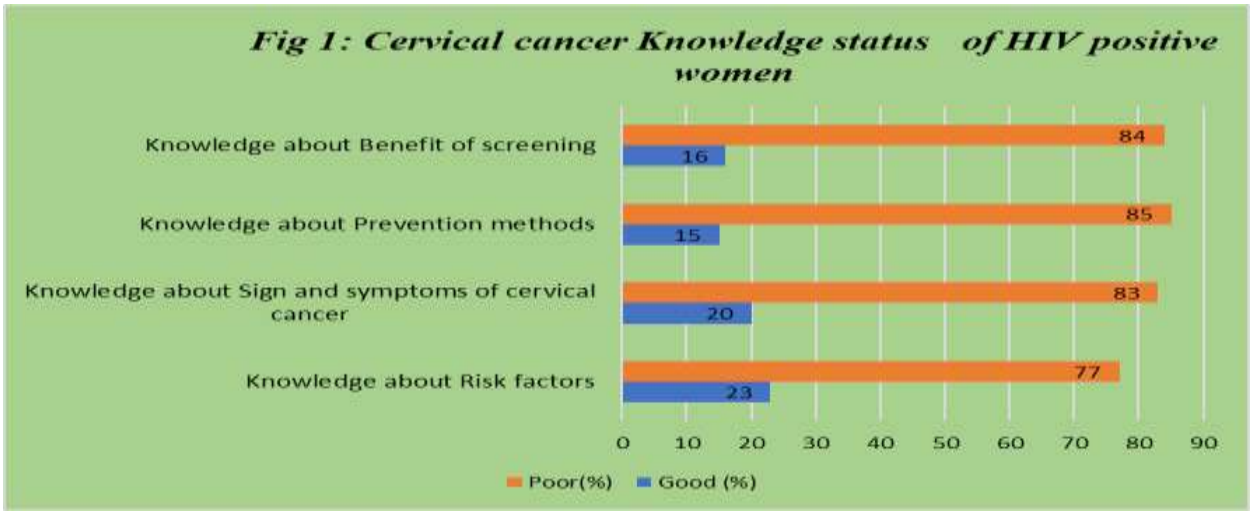


**Figure 1: Cervical Cancer Knowledge status of HIV positive women**

**Attitude of Respondents towards Cervical Cancer and its Screening**

About 53 percent of those surveyed strongly disagree with the likelihood of contracting the illness. The question of whether or not receiving a cervical cancer screening makes one infertile was posed to the responders. Eleven (14%) of the respondents strongly agreed that cervical cancer screening has a good effect on infertility; 21% were unsure if cervical cancer screening may cause infertility, while 57% of the respondents strongly disagreed with this statement. While 30% of respondents strongly agreed that it was crucial for women to receive cervical cancer screenings even if they abstain from sexual activity, 32% strongly disagreed (Table 3). Eighty people were surveyed, and 47 percent of them expressed support for cervical cancer screening.

**Table 3: Responses to attitude questions towards cervical cancer and its screening among HIV positive women**

| Items | Strongly disagree (%) | | Disagree (%) | | Not sure (%) | | Agree (%) | | Strongly agree (%) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Do you believe chance of getting the disease? | 43 | 53 | 9 | 11 | 9 | 12 | 9 | 11 | 11 | 13 |
| CCS undertaken is only when there is symptom? | 48 | 60 | 3 | 4 | 7 | 9 | 5 | 6 | 17 | 21 |
| Is it important to undertake CCS even if you do not commit sexual acts? | 26 | 32 | 5 | 6 | 21 | 26 | 5 | 6 | 24 | 30 |
| Cervical cancer is more serious than other diseases | 11 | 14 | 2 | 3 | 7 | 9 | 5 | 6 | 55 | 69 |
| Do you believe cervical cancer screening is painful? | 32 | 41 | 6 | 7 | 17 | 22 | 8 | 10 | 17 | 21 |
| Do you believe cervical cancer screening may cause infertility? | 45 | 57 | 2 | 3 | 17 | 21 | 4 | 6 | 11 | 14 |

**Medical and Reproductive Characteristics of Respondents.**

Only 40% of the women in the medical data were in WHO clinical stage I. The majority of women (76%) said they had never had several sexual partners, and 6% of them reported having cervical cancer in their families. According to this survey, 61% of respondents received a recommendation from a health practitioner for cervical cancer screening. The majority of women (62%) did not receive encouragement from their partners or husbands to examine their gynecological health (Table 4).

**Table 4: Medical and reproductive characteristics of HIV-positive women**

| ***Variables*** | Screened for cervical cancer | |
|---|---|---|
| | Yes | No |
| Diagnosed for HIV (year) | | |
| <5 | 24 | 76 |
| ≥ 5 | 54 | 46 |
| WHO clinical stage | | |
| One | 24 | 76 |
| Two | 41 | 59 |
| Three | 62 | 38 |
| Four | 52 | 48 |
| Duration of enrollment | | |
| <=4 | 24 | 76 |
| 5–9 | 52 | 48 |
| >10 | 54 | 46 |
| Multiple sexual partner | | |
| No | 38 | 62 |
| Yes | 47 | 53 |
| Family history of cervical cancer | | |
| Yes | 38 | 63 |
| No | 77 | 23 |
| Age at first sexual act | | |
| <20 | 37 | 63 |
| 20+ | 42 | 58 |
| Partner support | | |
| Yes | 62 | 38 |

**Utilization of Cervical Cancer Screening among HIV Positive Women**

In this study, 40% of the respondents were found to have had screening during the previous five years, whereas 60% had not (Fig. 2). Thirty seven percent of individuals who did not screen stated that the main reason they did not screen was a lack of understanding about cervical cancer and its screening. Other factors were a lack of symptoms, anxiety of test results, the idea that screening would be uncomfortable, not knowing where the screening would take place, etc. (Fig.3).

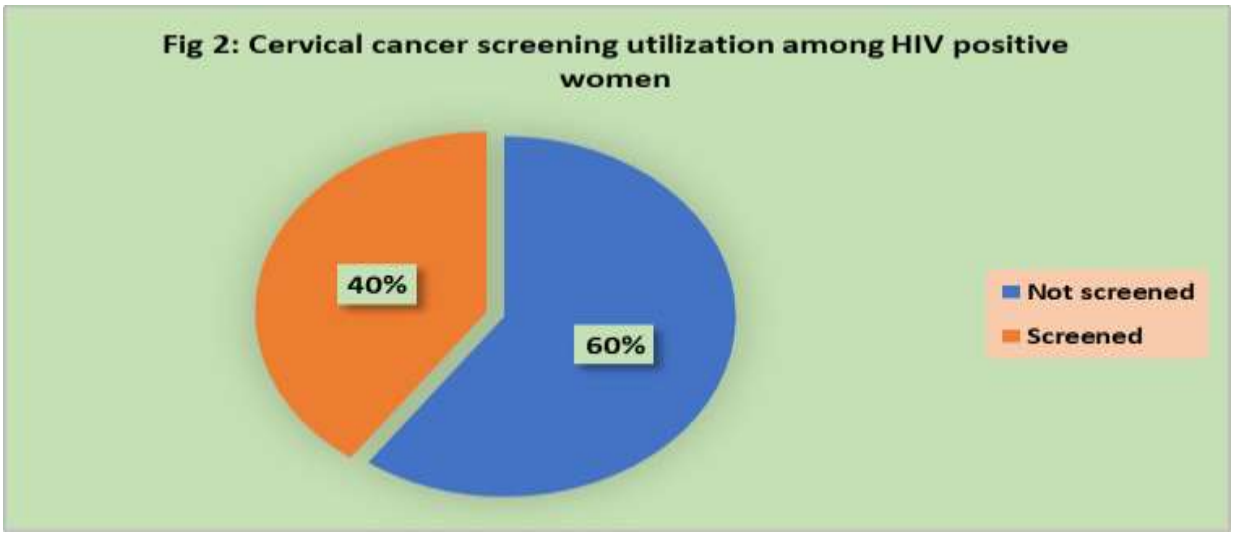


**Figure 2: Cervical Cancer screening utilization among HIV positive women**

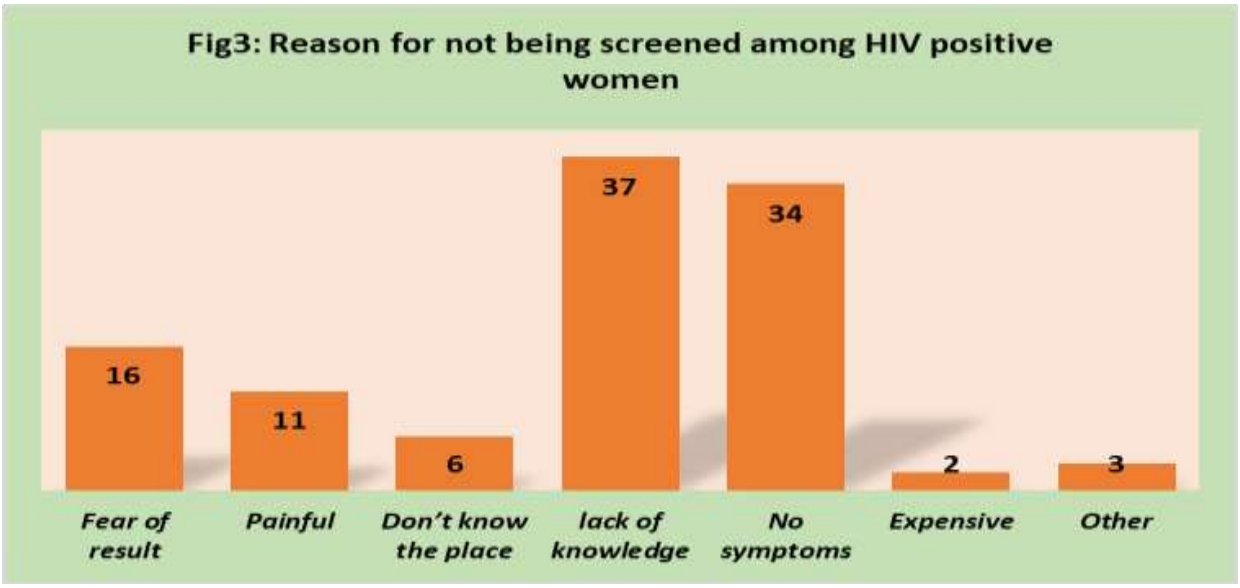


**Figure 3: Reason for not being screened among HIV positive women**

## DISCUSSION

According to this study, 40% of HIV-positive women had undergone cervical cancer screening, which is similar to studies [9, 15, 16]. The increased nationwide advocacy, media attention, community sensitization, and awareness creation through expansion of urban health extension programs about cervical cancer screening that has been implemented in recent years, as well as the improved expansion and access of screening centers in many healthcare facilities, may all be contributing factors. Differences in the sociodemographic characteristics and economic standing of the research participants, as well as variances in the promotional policies of the various nations, may be the cause of this discrepancy. The unequal distribution of institutions offering screening services might be another factor in the decline in screening usage. For instance, unlike other healthcare systems, Canada has universal access to medical treatment, which includes the availability of primary care and specialized physicians [18]. Similarly, Kenya has a more effective cervical cancer screening program, which has increased awareness of the disease and its screening [19]. According to the results of our survey, lack of awareness and the absence of symptoms were the two most common excuses given for not getting a cervical cancer screening. The research conducted in Uganda, India, and Gondar, which found that a lack of information and the absence of symptoms were among the reasons for declining cervical cancer screening, respectively, also reported a similar explanation [20]. In a study done in Zimbabwe, women also said that they did not use the cervical cancer screening services since they had no

symptoms [21]. The results of this study imply that educational attainment has a favorable influence on the use of cervical cancer screening services. In other words, women with post-primary education are more likely to use services for cervical cancer screening than are women with no formal education. This is not unexpected since we anticipate that educated women will be aware of the disease's source, risk factors, methods of prevention, and treatments, and will be able to request screening services as a result. Additionally, educated women are more effective in producing health and education as well as social inclusion, motivation, and self-efficacy in the pursuit of health treatments. Furthermore, it is thought that education makes it easier for women to assimilate the health information provided to them at healthcare facilities about prevalent acute and chronic disorders [22]. According to the results of the present study, respondents with spousal support had roughly five times as much probability of getting a cervical cancer screening than respondents without partner support. This might be explained by the fact that male partners' active participation raises their awareness of the value of maternal health care services and encourages them to assist their spouses. For instance, 88% of respondents to this study were from urban settings compared to 55% of respondents from rural settings in the study conducted in India, which suggests that the degree of knowledge of their spouse may be a contributing factor. This study discovered that one of the important determinants of cervical cancer screening service use is the amount of time following HIV diagnosis. Respondents who received an HIV diagnosis five years or more ago had a four times greater likelihood of using a cervical cancer screening service than respondents who had an HIV diagnosis within the previous five years. This may be due to the fact that the longer someone has had HIV, the more likely it is that they will interact with healthcare professionals, who are the primary source of information about cervical cancer screening for study participants, and that they will be exposed to more cancer-related information, which may lead to a greater use of cervical cancer screening services. Finally, the current study discovered that increasing utilization of screening services was connected with having a positive attitude regarding cervical.

## CONCLUSION

In the study site, 40% of women who were HIV-positive used cervical cancer screening. Utilization of the service among HIV-positive women was correlated with partner support, attitude toward cervical cancer and its screening, time since HIV diagnosis, educational level, and knowledge of risk factors for cervical cancer. Lack of awareness and the absence of symptoms were the two most common excuses given for not getting a cervical cancer screening. Finally, the current study discovered that increasing utilization of screening services was connected with having a positive attitude regarding cervical cancer and its screening.

## RECOMMENDATIONS

In addition to providing reproductive health education to change women's attitudes toward cervical cancer for HIV-positive women in every clinical encounter, there should be ongoing surveillance of cervical cancer diagnosis and prevention efforts to address the issues related to cervical cancer screening. The involvement of partners in maternal health services, such as cervical cancer screening, should be encouraged by healthcare providers. Through the growth of the urban health extension program, there should be more national advocacy, media attention, community education, and awareness creation about cervical cancer screening. More healthcare workers must receive training on how to communicate with HIV-positive moms so that they may learn more about cervical cancer. This will likely increase their utilization of cervical cancer screening programs.

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