Understanding Knowledge, Attitude, and Uptake of Cervical Cancer Screening among Women in Kiryandongo General Hospital

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ABSTRACT

Cervical cancer remains a significant public health concern globally, particularly in low-income countries where mortality rates are disproportionately high. This cross-sectional study aimed to assess the knowledge, attitude, and uptake of cervical cancer screening among reproductive-aged women attending Kiryandongo General Hospital in Uganda. A sample size of 288 participants was determined using a modified Daniel's formula, and data was collected using investigator-administered questionnaires. Results revealed that while the majority of participants had heard about cervical cancer, knowledge about its causative agent, risk factors, and preventive measures was low. Despite this, a considerable proportion expressed positive attitudes towards screening and willingness to undergo screening. However, the uptake of cervical cancer screening was alarmingly low, with only 4.9% of participants having been screened. These findings underscore the urgent need for comprehensive awareness campaigns and improved access to screening services in order to address the knowledge gaps and increase uptake of cervical cancer screening among women in the study area.

Keywords: Cervical Cancer Screening, Pap smears, Health education, Knowledge, Attitude, Uptake, Reproductive-aged women

INTRODUCTION

Cancer is one of the leading causes of death globally [1]. Various types of cancer exist ranging from brain, blood, cervix, prostrate, uterus, stomach, breast, depending on the location of the cancer [1, 2]. Cervical cancer is a cancer that occurs in the lower one-third of the uterus that connects to the vagina and cervical cancer (CC) develops from the cervical cells. The two most common types of CC are cervical squamous cell carcinoma and adenocarcinoma [3]. Cervical cancer is an important public health problem in low-income countries, where over 85% of global deaths occur annually [4]. Globally, the World Health Organization (WHO) estimated in 2018 that 570 000 cases of cervical cancer (CC) and 31 1000 deaths from the disease occurred in 2018, which is the fourth most common cancer in women, ranking after breast cancer (2.1 million cases), colorectal cancer (0.8 million), and lung cancer (0.7 million), and it is the 2nd most leading cause of female cancer among women aged 15–44 years [5]. It is the second-most prevalent cancer among women in developing countries. In 2020, an estimated 604,000 women were diagnosed with cervical cancer worldwide, and about 342,000 women died from the disease [6]. More than 90% of this global mortality occurred in developing countries where the incidence of CC in Africa is on the rise, and Sub-Saharan Africa is the region with the highest incidence and mortality of CC in the world, with 75,000 annual new cases and 50,000 annual deaths [7]. The lowest rates of CC infection and mortality have been reported in developed nations when compared to developing nations like Africa, where inequality is linked to divergences in human development, social inequality, preventive health behaviour, living standards, and access to effective screening services [8]. The extent of cervical cancer in sub-Saharan Africa has received little recognition and prioritization due to a lack of good-quality epidemiological data, a lack of national cancer prevention programs, and a lack of cancer registries [9]. The etiological agent implicated in CC is the human papillomavirus (HPV), and the most common high-risk HPVs implicated include types 16

and 18, while other common HPV types in decreasing frequency are 45, 52, and 51, all causing viral infection of the uterine cervical epithelium, which initially develops into precancerous lesions referred to as cervical intraepithelial lesions or squamous intraepithelial lesions, which could take many years to progress into cancer and treatment [10]. Early detection is a key in the treatment of various types of cancer including [11, 12].In November 2020, the Director-General of WHO launched the Global Strategy to Accelerate the Elimination of Cervical Cancer, including the following targets for each of the three pillars for 2030: 90% HPV vaccination coverage of eligible girls, 70% screening coverage with a high-performance test, and 90% of women with a positive screening test or a cervical lesion managed appropriately [13]. Hence, following the launch of the global strategy, a large panel of experts met to define the key areas of focus to increase access to screening and treatment to reach the 2030 targets, whereby one of the agreed areas of focus was to update the existing WHO recommendations for screening and treatment to prevent cervical cancer [14]. Some factors that are associated with CC infection include having multiple sexual partners, being HIV-positive, having a history of sexually transmitted infections, and beginning sexual intercourse at an early age [6, 15]. Cervical cancer can be prevented at the primary (prophylactic HPV vaccination with either quadrivalent and bivalent vaccines), secondary, or tertiary stage. Secondary prevention by screening remains the most effective control strategy for cervical cancer, whereby organized cytology-based screening programs using Papanicolaou (Pap) smears with coverage of high-risk groups associated with CC in developed countries have resulted in a significant reduction of cervical cancer incidence and mortality [9]. The global cervical cancer burden is disproportionally high in low- and middle-income countries, where Uganda is parred and where 83% of all new cases and 85% of cervical cancer deaths occur [16]. HPV has been established as a necessary cause of nearly all cervical cancer [9]. It has been reported that primary prevention of CC by vaccination of adolescents against HPV 16 and HPV 18, which cause approximately 70% of cervical cancers, can prevent the majority of CC cases and, when frequent screening is adopted, allows for early detection and removal of precancerous lesions [16]. Screening and treatment approaches have been recommended by WHO, including the screen-and-treat approach, in which the decision to treat is based on a positive primary screening test only screen, triage, and treat approach), and the decision to treat is based on a positive primary screening test followed by a positive second test (a —triage‖ test), with or without histologically confirmed diagnosis [14]. The extent of cervical cancer in sub-Saharan Africa has received little recognition and prioritization due to a lack of good-quality epidemiological data, a lack of national cancer prevention programs, and a lack of cancer registries [9]. However, the uptake of screening remains low and is further compounded by the lack of basic knowledge women have regarding screening as an opportunity for the prevention of cervical cancer. Therefore, this study may fill in this knowledge gap. Thus, this study aimed to determine the knowledge, attitude, and uptake of cervical cancer screening among reproductive-aged women attending Kiryandongo General Hospital.

METHODOLOGY

Study design

The design of this study was a cross-sectional study aimed at determining the knowledge, attitude, and uptake of cervical cancer screening among reproductive-aged women attending Kiryandongo General Hospital (KGH).

Study Site

The study was conducted at Kiryandongo General Hospital, which is a government-aided facility located in Kiryandongo District along the Kampala-Gulu Highway, about 220 kilometres from Kampala, the capital city of Uganda. It is in the Bunyoro greater region, but the population present included not only the Banyoro but also Paluo, Acholi, and Aluru, migrants from other Ugandan districts, and refugees from Southern Sudan. KGH, where the study was carried out, contained an outpatient clinic involving all categories of clients, including diabetics, gynaecology, cervical cancer screening (CCS), HIV/AIDS, ANC, family planning clinics, and others. This study will be conducted in the outpatient clinic at KGH, which is managed by both the government and lecturers of Kampala International University (KIU), medical officers, clinical officers, midwives, and nurses assigned to all its subunits.

Study population

The study participants were women of reproductive age attending the outpatient clinic at KGH.

Inclusion criteria

Reproductive-aged women aged 20 to 49 who accepted to participate in the study.

Exclusion Criteria

The women below 25 and above 49 years of age, who are very sick, and those who did not accept the voluntary recruitment for the study

Sample Size Determination

The sample size was calculated from a study on knowledge, attitudes, and practice of cervical cancer prevention among health workers in rural health centres in Northern Uganda, which reported that 75% of female participants self-reported having been screened for cervical cancer [17]. Using modified Daniel's formula [18]:

Where N is the sample size required.

Z = level of significance at 95% confidence interval (Z = 1.96).

P = prevalence of CCS = 75% (=0.75).

E = margin of error of accuracy (α = 5%) (taken as 0.05)

N =3.8416x0.1875/0.0025

N = 288

Therefore, the required sample size for the study was **288** participants.

Sampling Technique

The participants were enrolled in the study by a simple random sampling method until the required sample size was met. This method was used to prevent bias.

Data Collection Instruments

The data collection instruments were investigator-administered questionnaires.

Validity of Data Collection Instruments

The investigator administered questionnaires that were pretested at a different site than the study site to identify their reliability and identify any sources of errors that were corrected before data collection.

Data Collection Procedure

A simple random sampling method was used during the recruitment of participants. The participants were counselled and taught about the study, and their consent was asked for their participation in the study. Those who accepted were provided with the option to choose secret numbers, and those who were accepted to be given a consent form to sign were chosen after every three women of reproductive age who had chosen the secret numbers. Questionnaires were provided to them promptly after they signed the consent form, which was filled out by the principal investigator and the research assistants. The participants were asked questions about knowledge, attitude, and uptake of CCS to obtain answers to the research questions. The completeness of the questionnaires was checked accordingly. For knowledge, each correct response received 1 point, and for Attitudes that strongly agree or agree were graded as good, and those that disagree or are neutral were graded as bad. The scores were transformed into a percentage for interpretation. The mean scores were then calculated and utilized to describe the participant's knowledge and attitude towards cervical cancer screening.

Data Storage and Analysis

Data collected from the respondents was stored under lock and key only accessible to the principal investigator. Data on questionnaires was entered in Microsoft Excel version 2010, and then data from Excel was imported into SPS. Baseline demographics were assessed using univariate analysis. Proportions, percentages, and frequencies were used for categorical variables. The data was presented in the form of tables and graphics, as this was calculated as a proportion of those respondents who know CCS to the total number of respondents in the study this was calculated as a proportion of those respondents who have an attitude toward CCS to the total number of respondents in the study. This was calculated as a proportion of those respondents who have been screened for CC to the total number of respondents in the study.

Quality Control

To ensure the quality of the data collected, the selection criteria were strictly adhered to. The pretested questionnaires were used for the data collection.

Feasibility of the Study

Kiryandongo General Hospital receives an average of 650 women of reproductive age in the outpatient clinics. Therefore, with these average numbers, the researcher believes that the required sample size was met.

Ethical Consideration

Informed consent and respect for participants: voluntary recruitment was done, and an informed consent was signed. Participants were free to withdraw from the study at any time they wished. Risks and adverse events to study participants: This study had no risks to the participants as it only involved the collection of data by asking questions and not an interventional study. Benefits of the research: The study was aimed at creating awareness among the hospital and stakeholders. The participants may benefit when the results of the study are disseminated and recommendations implemented. Privacy and Confidentiality: Identification of participants was done using numerical codes. The details of respondents were kept under lock and key for privacy and confidentiality purposes throughout the research. Selection of Participants: A simple random sampling

method was used to select participants to ensure no bias during the selection of the participants. No monetary or any other form of incentive was offered to the participants. The procedures involved in this study were not against the local community's beliefs, traditions, and culture. Approval Procedure:

Approval to carry out the study was sought from the faculty of clinical medicine of Kampala International University (KIU)—Western campus, which was presented to the medical superintendent of Kiryandongo General Hospital to permit the principal investigator to collect data at the hospital.

RESULTS

Socio-demographic characteristics of the study participants

A total of 288 women responded to the questionnaire. The majority (45.1%) of the study participants were 20–30 years old and from rural

areas (82.3%). Most of the study participants (43.1%) had completed primary school, were peasant farmers (73.3%), and were married (66.0%) (Table 1).

Table 1: Socio-demographic characteristics of the study participants

Variable Age (Years)	Frequency(N=288)	Percentage (%)
20-30	**130**	**45.1**
31-40	95	33.0
41-49	63	21.9
Residence		
Urban	51	17.7
Rural	237	82.3
Level of education		
None	41	14.2
Primary	124	43.1
Secondary	94	32.6
Tertiary	29	10.1
Occupation		
Peasant Farmer	211	73.3
Civil servant	19	6.6
Private business	58	20.1
Marital status		
Single	98	34.0
Married	190	66.0

Knowledge of cervical cancer screening

The majority (87.8%) of the study participants had heard about cervical cancer, while 83.7% didn't know the causative agent of cervical cancer. The main source of information was the health facility (36.0%), and vaginal foul-smelling discharge was the commonest symptom stated (27.1%). Only 29.9% knew the risk factors for cervical cancer, while the majority (55.9%) didn't know how a person could prevent cervical cancer. Most (51.7%) of the study participants knew that cervical cancer can be treated in its earliest stages, while 67.0% didn't know any screening methods (Table 2).

Table 2: Knowledge of cervical cancer screening

Variable Have you ever heard about cervical cancer?	Frequency(N)	Percentage (%)
Yes	253	**87.8**
No	35	**12.2**
Where did you learn about cervical cancer? Teachers	29	**11.5**
Health facility	91	**36.0**
Family	73	**28.9**
Friends	41	**16.2**
Magazine and posters	19	**7.5**
What is the causative agent of cervical cancer? Virus	14	**4.9**
Bacteria	22	**7.6**
Parasite	11	**3.8**
Don't know	241	**83.7**
What are the symptoms of carcinoma of the cervix? Vaginal foul smelling discharge	78	**27.1**
Vaginal irregular bleeding	61	**21.2**
Post-coital bleeding	44	**15.3**
All of the above	56	**19.4**
Don't know	**49**	**17.0**
Do you know the risk factors for cancer of the cervix?		
Yes	86	29.9
No	202	70.1
How can a person prevent getting cancer of the cervix?		
Avoid risk factors	**72**	**25.0**
Vaccination	55	19.1
I don't know	161	55.9
Can cancer of the cervix be cured in its earliest stages?		
Yes	149	51.7
No	139	48.3
Which screening method do you know? Pap smear	32	11.1
VIA	14	4.9
HPV DNA	06	2.1
All the above	43	14.9
I don't know	193	67.0

Knowledge score of cervical cancer screening
In the study, only 24.3% of the women had adequate knowledge while 75.7% had poor knowledge about cervical cancer screening as illustrated in figure 1 below.
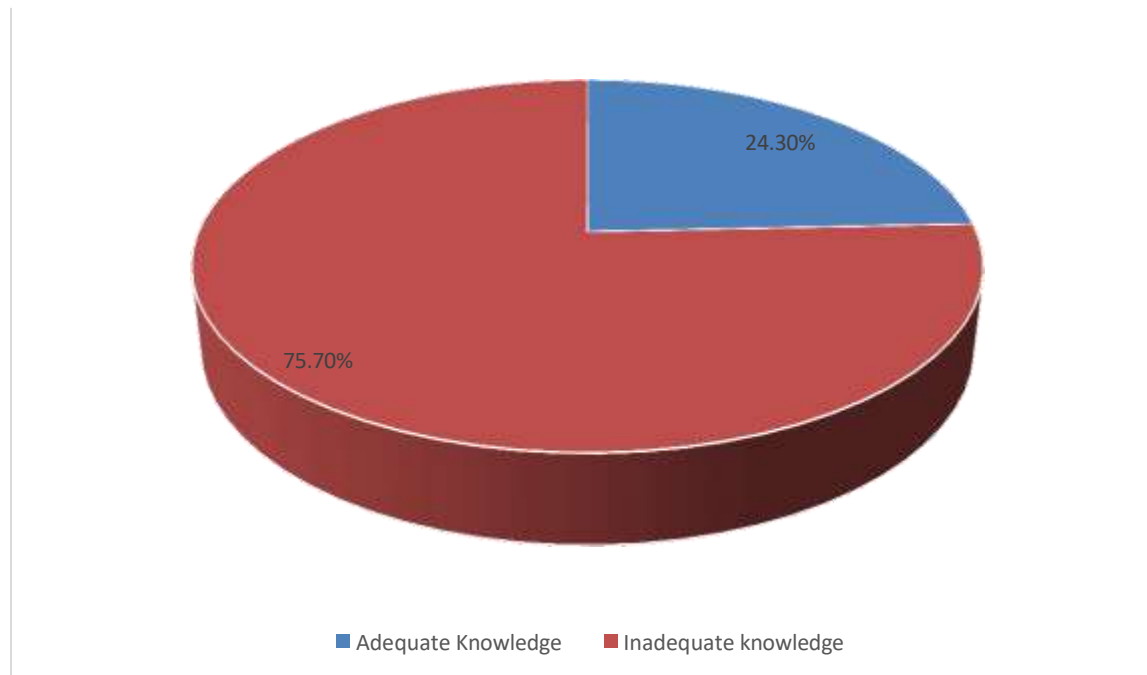

Figure 1: Knowledge score of cervical cancer screening

Attitude towards cervical cancer screening

Most women (40.6%) agreed it is helpful to detect cervical cancer early and the majority (36.5%) disagreed that they have a chance of getting cervical cancer. When asked if they thought there are effective methods to reduce the seriousness of cervical cancer, the majority (38.2%) were neutral while the majority (63.9%) strongly agreed that cervical cancer is the cause of death. The majority (51.4%) disagreed that any woman can acquire cervical cancer and 47.6% disagreed that carcinoma of the cervix can be treated. The majority (47.9%) agreed that screening helps in the prevention of cervical cancer and 75.0% strongly agreed that they were willing to be screened as shown in Table 3 below.

Table 3: Attitude towards cervical cancer screening

Variable	N	%
Do you think it is helpful to detect cervical cancer early?		
Strongly agree	**71**	**24.7**
Agree	117	40.6
Neutral	66	22.9
Disagree	34	11.8
Do you believe that you have the chance of getting cervical cancer?		
Strongly agree	39	13.5
Agree	50	17.4
Neutral	94	32.6
Disagree	105	36.5
Do you think that there are effective methods to reduce the risk of seriousness of cervical cancer?		
Strongly agree	65	22.6
Agree	49	17.0
Neutral	110	38.2
Disagree	64	22.2
Do you think carcinoma of the cervix is the cause of death?		
Strongly agree	184	63.9
Agree	38	13.2
Neutral	43	14.9
Disagree	23	8.0
Do you think any women acquire cervical cancer?		
Strongly agree	29	10.1
Agree	92	31.9
Neutral	19	6.6
Disagree	148	51.4
Do you think carcinoma of the cervix can be treated?		
Strongly agree	45	15.6
Agree	69	24.0
Neutral	37	12.8
Disagree	137	47.6
Do you think screening helps in the prevention of cervical cancer?		
Strongly agree	60	20.8
Agree	138	47.9
Neutral	59	20.5
Disagree	31	10.8
Willingness for screening		
Strongly agree	216	75.0
Agree	42	14.6
Neutral	21	7.3
Disagree	09	3.1

Attitude score towards cervical cancer screening
In this study, majority (58.3%) of study participants had good attitude and while 41.7% had poor

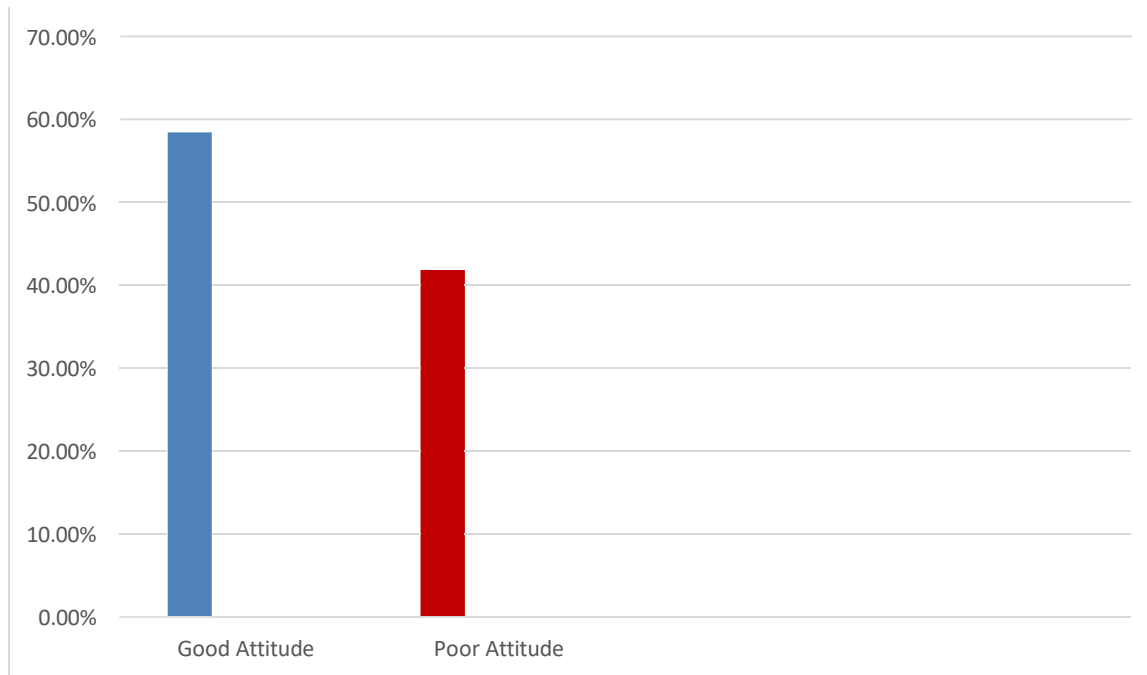attitude towards cervical cancer screening (Figure 2).

Figure 2: Attitude towards cervical cancer screening

Uptake of cervical cancer screening
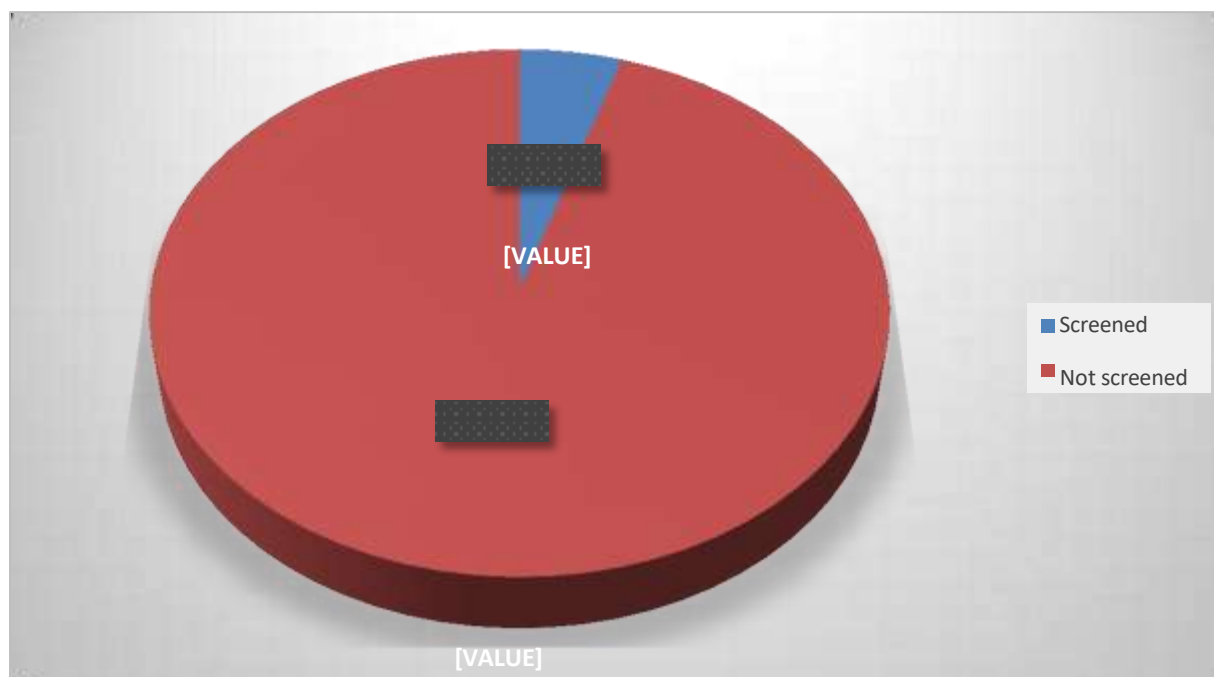Only 14(4.9%) of the study participants had been screened for cervical cancer as shown in figure 3 below.

Figure 3: Uptake of cervical cancer screening

DISCUSSION

Worldwide, among women between the ages of 15 and 44, cervical cancer ranks second in terms of frequency and is a leading cause of premature mortality [19]. Between industrialized and developing nations, there is a significant difference in the incidence and mortality of cervical cancer, with less developed areas of the world accounting for 85% of cases and 87% of fatalities [20]. The highest incidence and fatality rates for cervical cancer are seen in Eastern and Southern Africa within the continent of Africa [19]. The delivery of cervical cancer preventive programs in SSA is hampered by a number of issues, including inadequate supplies and equipment for cervical cancer screening and treatment and a lack of diagnosis and treatment initiation due to a lack of service capacity [16].

Knowledge of cervical cancer screening

In the study, only 24.3% of the women had adequate knowledge, while 75.7% had poor knowledge about cervical cancer screening. This is inconsistent with a study in Botswana that revealed that all the study participants had knowledge of cervical cancer and screening [21]. This high degree of awareness may be attributable to the respondents' educational backgrounds, given the fact that the study was conducted among university students, the print media's influence, and the health sector's role in raising public awareness of the disease. Further, the study finding is comparable to a study in South Africa, which found that only 28% of the study participants had adequate knowledge about cervical cancer and screening [9]. Given their exceptionally high risk, it is imperative that rural women are aware of cervical cancer. Therefore, the emphasis of awareness campaigns and programs should be on raising awareness of the issues and distributing knowledge about cervical cancer prevention. However, the finding is higher compared to 19.87% of participants who reported having adequate knowledge in Ethiopia [22]. The majority (87.8%) of the study participants had heard about cervical cancer, while 83.7% didn't know the causative agent of cervical cancer. This finding is higher compared to a study in Northern Uganda, which showed that 62.7% of the participants had heard of cervical cancer [23]. Additionally, the finding is similar to a study in South Africa, which indicated that 90% of the study participants had heard about cervical cancer

[9]. The fact that the study was done at a medical facility that offers cervical cancer screening education programs may have contributed to the study's high level of awareness. The study finding is further lower compared to a study in Ethiopia, where 18.6% of the participants knew that HPV is a cause of cervical cancer [22]. The main source of information was the health facility (36.0%), and vaginal foul-smelling discharge was the commonest symptom stated (27.1%). This is consistent with a study in South Africa that showed that the main source of information indicated by the study participants was community health workers and a doctor or nurse [9]. Only 29.9% knew the risk factors for cervical cancer, while the majority (55.9%) didn't know how a person could prevent cervical cancer. In contrast to the findings of this study, a study in Ethiopia showed that 73.9% and 73.1% believed that having multiple sexual partners and early marriage were risk factors for cervical cancer, respectively. Most (51.7%) of the study participants knew that cervical cancer can be treated in its earliest stages, while 67.0% didn't know any screening methods. This is inconsistent with a study in Chitwan, where 68.8% and 21.5% mentioned a pap smear and visual inspection with acetic acid (VIA) as the screening tests for cervical cancer [24].

Attitude towards cervical cancer screening
In this study, the majority (58.3%) of study participants had a good attitude, while 41.7% had a poor attitude towards cervical cancer screening. This finding together shows that women's attitudes are relatively encouraging despite their lack of knowledge about cervical cancer and its prevention. This finding is in line with a study in Ethiopia [22]. The present study revealed that most women (40.6%) agreed that it is helpful to detect cervical

cancer early, and the majority (36.5%) disagreed that they have a chance of getting cervical cancer. This is inconsistent with a study in Ethiopia, which revealed that 91.2% of the study participants believed that early detection of the disease was good for treatment outcomes [22]. When asked if they thought there were effective methods to reduce the seriousness of cervical cancer, the majority (38.2%) were neutral, while the majority (63.9%) strongly agreed that cervical cancer is the cause of death. The majority (51.4%) disagreed that any woman can acquire cervical cancer, and 47.6% disagreed that carcinoma of the cervix can be treated. This is in concordant with a study in Ethiopia, where 65.3% and 42.7% said that cervical cancer is preventable and cured, respectively [22]. The present study indicated that the majority (47.9%) agreed that screening helps in the prevention of cervical cancer, and 75.0% strongly agreed that they were willing to be screened. This is in line with a study in Chitwan in which 68.8% and 24.0% strongly agreed and agreed to undergo cervical cancer screening, respectively [24].

Uptake of cervical cancer screening
The study showed a very low uptake of cervical cancer screening, as only 4.9% of the study participants had been screened. This is lower than the 20.6% reported by a cross-sectional study in central Uganda [25]. However, the finding is comparable to 4.8% and 9% reported in Eastern Uganda and Zimbabwe, respectively [26]. The study finding is lower compared to the rate of uptake of cervical cancer reported to be 12.87% in Sub-Saharan Africa [27]. The low uptake may be attributed to inadequate knowledge about cervical cancer screening.

CONCLUSION
The overall knowledge score about cervical cancer screening is poor. The overall attitude score is good. The uptake of the cervical cancer screening was low.

Recommendation
 Increased awareness of cervical cancer screening is recommended to increase cervical knowledge among the population. There is a need to increase the attitude towards cervical cancer screening. Health education about cervical cancer and its dangers is recommended to increase the uptake of cervical cancer screening.

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