Prevalence of Cervical Cancer Screening Among Women in Fishing Communities of Entebbe Municipality, Wakiso District. A cross sectional study.

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Abstract

Background:

Cervical cancer disease in Uganda remains the leading causes of deaths among cancer patients, responsible for about 4,607 deaths annually. Despite the numerous modern treatment options and prevention strategies, cervical cancer screening prevalence remains undefined especially in the fishing communities and yet women living in fishing communities are core interest groups for cervical cancer due to their relatively higher risk of HIV and HPV infections.

Methodology:

A cross sectional study employing a quantitative approach was performed, purposive sampling following a household survey was conducted. Structured interviews and questionnaires were administered to collect data from June 2021 to August 2021. Data was analyzed in SPSS version 25 using the log-binomial model.

Results:

The prevalence of cervical cancer screening among women in fishing communities of Entebbe municipality, Wakiso district remains as low as 23.2%, mainly unsatisfactory among the married women (aPR = 0.232 [0.13 - 0.43], $p < 0.001$) and, Catholics (aPR = 0.050 [0.01 - 0.18], $p < 0.001$). At the same time, higher cervical cancer screening prevalence was observed among employed women (aPR= 2.81 [1.48 - 5.33], p = 0.002), those who had prior recommendation from healthcare workers (aPR = 1.25 [0.09 - 0.65], p = 0.004), and those who perceived that cervical cancer is a curse from God (cPR = 2.800 [CI = 1.798 - 4.36], P = 0.000).

Conclusion:

Cervical cancer screening is low among women in fishing communities of Entebbe municipality; only 2 in every 10 women have ever been screened for cervical cancer in their lifetime, while less than 1 in 10 has had follow up of screening.

Recommendation:

Behavior change communication preferably using the intrapersonal channel on issues related cervical cancer screening should be adopted in the fishing communities urgently if we are to elevate uptake of this secondary prevention measure for cervical cancer.

1. Background of the study

According to the World Health Organization (WHO), each year 9.3 million people die due to cancers of which 400,000 are attributed to cervical cancer worldwide[1]. Unfortunately, majority of these deaths occur in East Africa[2]. Cervical cancer has been explicitly slated for total elimination by the year 2030, through the implementation of the triple intervention[1]. Within the triple intervention, the targets are 90% of all eligible women are vaccinated against HPV, 70% of all eligible women are screened and 90% of those diagnosed with the disease are treated[1].

Cervical cancer screening refers to the use of various biomedical strategies to detect cancerous cells in cervical tissues[3]. The strategies range from Visual Inspection with Acetic Acid (VIA), liquid-based cytology and HPV-DNA testing, cervical cancer screening allows for early-stage detection of cervical cancer diagnosis, which then allows for prompt non-aggressive treatment that increases Disease Free Survival (DSF) [4,5].

Cervical cancer at stage 1A and 1B, pharmacological interventions usually include radiation, chemotherapy, and radical trachelectomy are applied[6]. In cases of advanced disease, invasive surgery and adjuvant therapy become inevitable; interventions including laparoscopic radical hysterectomy (LRH) and abdominal radical hysterectomy (ARH) are used [7]. However, late-stage interventions are associated with recurrence of cervical cancer [8,9,10,11] and low disease-free survival (DFS) [12,13].

Therefore, given that majority of the women in fishing communities engage in risky sexual behavior [14,15,16] and many of them are HIV seropositive [17,18] puts women in fishing communities at a high risk for HPV infection.And yet, women that are HIV sero negative ought to screen once every three years if using cytology and once every 5 years if using HPV-DNA testing whereas HIV seropositive ought to screen annually because

of the impaired immune system [19,20]. Consequently, cervical cancer screening services in the fishing communities need to be emphasized with explicit documentation of the prevalence of cervical cancer screening. This study sought to explore the Prevalence of Cervical Cancer Screening Among Women in Fishing Communities of Entebbe Municipality, Wakiso District.

2. Methodology

2.1. *Study setting and Study design*

The study was conducted in Entebbe Municipality, Wakiso district, Central Uganda. Entebbe municipality is surrounded by Lake Victoria and has two main landing sites and hence fishing communities, that is, Kigungu and Kasenyi landing sites. Kigungu is located past Entebbe international airport, in Kigungu central parish, Kigungu LC1. The fishing community has a population of about 8000 people of which 4640 are women. Kasenyi landing site is on the other hand located in South East of Abayita abibiri, and situated in Nkumba parish, Bendegere L.C.I, Katabi Sub County, Busiiro County. Kasenyi landing site is home to about 26,575 fisher folks, of which 14059 are female and is known to have a substantial FSW population.

This was cross sectional survey design that employed a quantitative approach to collect data from women in fishing communities in Entebbe Municipality – Wakiso district. Close ended questionnaires were used to capture data in a quantifiable manner.

2.2. *Study population*

The study population was particularly women living in fishing communities who were between the ages of 26 and 65 years old. This study targeted women living in fishing communities of Wakiso district given that the population constitutes many women living with HIV and hence are at a 6-fold risk of being infected with HPV.

2.3. *Eligibility criteria*

Women in fishing communities who had spent at least 6 years while residents therein, because

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that period not only covers two screening intervals globally allowed for, but also makes one possibly realize their risk of infection and possibly change behavior. That is in addition to the fact that such a period makes one to be a bona fide member of a given fishing community, meaning that the responses they provide can be entirely reflective of the fishing community they are in.

The study excluded; Women in fishing communities who had a total hysterectomy or trachelectomy done due to any prior obstetric complications as those are ineligible for cervical cancer screening and, Women who may have been vaccinated for HPV, during their teen ages were also excluded as they also do not have to screen for cervical cancer.

2.4. *Sample size calculation*

The study adopted Krejcie and Morgan (1970) formular's for sample size determination. The choice of that formula was informed by the fact that the prevalence of cervical cancer screening among women in fishing communities (p) is not documented in the context of Entebbe municipality or any other fishing community elsewhere [2] there is no documentation of what the proportion (p) of women in fishing communities aged between 31 and 65 years is [3] yet the local councils of the villages within which the fishing communities targeted are located have estimates of the target population sizes of women in those communities. The formula by Krejcie and Morgan (1970) considers the proportion (P) to be a constant (50%) and only requires substitution of the target sample size (N), which the study could obtain. The formula is given by;

s = X2NP (1- P) / d2 (N -1) + XP (1-P) Where;
s = required sample size.

X2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size = estimated number of women aged between 30 and 65 years at Kigungu and Kasenyi landing sites = 1229 women

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05). Therefore;

s = $\dfrac{1.96^2 \times 1229 \times 0.5\,(1\text{-}\,0.5)}{0.05^2\,(1229\text{ -}1) + 1.96^2 \times 0.5\,(1-0.5)}$

s = $\dfrac{3.841 \times 1229 \times 0.25}{0.0025\,(1228) + 0.9604}$

s = $\dfrac{1180.3}{3.07 + 0.9604}$

s = 293 women living in fishing communities.

2.5. *Sampling procedures*

The study sites were purposively sampled by virtue of the fact that the two distinct fishing villages; Kigungu and Kasenyi fishing communities have the lowest level of local government administration and are home to more than 2000 women of which less than 50 of them are registered as screened for cervical cancer at the three main healthcare service providing facilities in Entebbe municipality, annually. At the same time Convenience sampling of study participants was employed on each household, hence maximizing chances of obtaining the required number of women above the age of 30 years. However, in order to determine the number of women who were required from each of the fishing communities at the two landing sites, proportioning according to size was done using the formula below.

NWRPV = NAWPV / NTNWPV x n Where;

N_{WRPV} = Number of women required from a given village N_{AWPV}=Available number of women in a given village

N_{TNWPV} = Total number of women in all the sampled villages $\approx$ 1229 n = Sample size.

2.6. *Data collection and Analysis*

Data were collected through structured interviews that were particularly designed to collect responses in a close ended and quantifiable manner. Structured questionnaires were designed with multiple choice questions with a set of predetermined responses from which a respondent has to select what applies to them, following a structured interview. The questionnaire assessed for socio demographic characteristics of respondents and the cervical cancer screening status of participants and the questionnaire was administered

Table 1: sampling

Fishing village	NAWPV	NTNWPV	n	NWRPV = NAWPV / NTNWPV x n
Kigungu	520	1229	293	124
Kasenyi	669	1229	293	169

by the interviewer. Data was the analysed using SPSS version 25, descriptive analysis was run for all data that had been collected. The descriptive analysis yielded frequencies and valid percentages, from which the main study objective was achieved since it required the establishment of the prevalence (%) of cervical cancer screening.

2.7. *Quality control*

Validity in this study was measured using content Validity Index (CVI) and reliability was determined using the alpha coefficient Cronbach, 195121. In testing the reliability of the tool, pretest was conducted among 10% of the sample size, using the same questionnaire (Appendix B) in a similar setting. women living in fishing communities of Gaba landing site, in Kampala. were chosen as a study site because like Kasenyi and Kigungu, it also has fishing communities with women who are at risk of HPV infection and hence ought to be screened. Establishment of whether or not the tool had high internal consistency was done following the scale below;

The actual test for reliability using the Cronbac alpha revealed that the alpha was 0.743, which according to the table above is the range of $0,7 \leq \alpha < 0,9$ that indicates internal consistency.

2.8. *Ethical considerations*

Approval to conduct this study was obtained from the Uganda Martyrs university faculty of Health Sciences ethics committee. Permission to conduct the study was then obtained from the local councils where Kigungu and Kasenyi landing sites are located. The right to self-determination and consent by each respondent was observed; all participants were comprehensively informed about the study and all its procedures and made an informed decision of whether or not they would participate in the study. When engaged in interviews, it was ensured that privacy was observed as well; no third party (person) was allowed within hearing distance of the interview with each woman. No full names or names were captured on the questionnaire or consent forms of the respondents as a way of observing confidentiality and following each interview, all filled questionnaires were kept with the principal investigator.

The participants were informed about the voluntariness of participation in this study; they were all told that their participation would not be compensated for, and that therefore, they were able to withdraw from the study at any time without any repercussions whatsoever. Since the study was conducted during the corona virus disease 19 (COVID-19) pandemic, the right to protection from harm was also observed. All the standard operating procedures (SOPs) (social distancing, putting on face masks and hand washing where necessary) for COVID-19 prevention were observed when engaging the interviewees.

3. Results

3.1. *Socio demographic characteristics of the respondents*

This section includes a description of finding related to the age of respondent, marital status, level of education, religion, employment status and the fishing community of the respondents

From Table 4, above More than a third of the women sampled were between the ages of 26 - 36 years 153(52.2%) and more than half of them were not currently married 156(53.2%). Half of the women sampled were separated 78 (50.0%), while the majority had been educated to secondary level or higher 178 (60.8%). Half of the women sampled were reportedly Catholic 152(51.9%), were

Table 2: scale

Cronbach's Alpha Coefficient	Interpretation of Cronbach's Alpha Coefficient
$\geq 0{,}9$	The internal consistency of the scale is high,
$0{,}7 \leq \alpha < 0{,}9$	The scale has internal consistency,
$0{,}6 \leq \alpha < 0{,}7$	The internal consistency of the scale is acceptable,
$0{,}5 \leq \alpha < 0{,}6$	The internal consistency of the scale is weak,
$\alpha \leq 0{,}5$	The scale has no internal consistency.

Source: Cronbach (1951)

Table 3: Reliability Statistics

Cronbach's Alpha	N of Items
0.743	32

Table 4: Socio demographic characteristics of the women

Variable	Category	Frequency	%
Age of respondent(years)			
	26 - 36	153	52.2
	37 - 47	124	42.3
	48 - 58	16	5.5
Currently married			
	Yes	137	46.8
	No	156	53.2
Marital status			
	Single	20	12.8
	Cohabiting	58	37.2
	Separated	78	50.0
Level of education			
	No formal education	18	6.1
	Primary	97	33.1
	Secondary or higher	178	60.8
Religious denomination			
	Catholic	152	51.9
	Anglican	89	30.4
	Muslim	29	9.9
	Born again	23	7.8
Currently employed			
	Yes	149	50.9
	No	144	49.1
Fishing community stayed in			
	Kigungu	124	42.3
	Kasenyi	169	57.7

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currently employed Yes 149 (50.9%), and more than half of them were residents in Kasenyi landing site 169(57.7%).

3.2. *Cervical cancer screening.*

More than three quarters of the women had never been screened for cervical cancer since turning 25 years old 225(76.8%). For the majority of those who had ever been screened 62(91.2%), it had been more than three years since they had screened for cervical cancer, and more than three quarters of them had not had follow-up screening done 50(80.6%). It can be concluded therefore, that the prevalence of cervical cancer screening among women in fishing communities of Entebbe municipality, Wakiso district is 23.2%.

4. Discussion

This study explored the prevalence of cervical cancer screening among women in the fishing communities of Wakiso district and, this study found that the prevalence of cervical cancer screening was 23.2%. In other words, only about 2 in 10 women in the two fishing communities had ever screened for cervical cancer. This leaves 80% of the women in the fishing communities as having never screened.

Although this finding may be consistent and/or higher than the prevalence's earlier reported in Somalia (19%), in Cameroon (20%), in Southern Ethiopia (3.8%), in Hossana Town, Hadiya zone, Southern Ethiopia (9.9%), in Lake Zone Tanzania (14.3%), and in Uganda two studies reported (20.6%) and (4.8%) by [22,23,24,25,26,27,28] respectively, the population sampled has disproportionately higher risk of developing cervical cancer. That is because the women sampled were residents in fishing communities, where HIV infection risk is 8 times higher, with the possible implication that the prevalence of HIV among the women sampled may have exceeded 10% as well. That alone puts some of them at a risk of developing squamous lesions and invasive cervical cancer. Even without considering HIV infection, most women in fishing communities have known

to engage in risky sexual behaviors, and have multiple sexual partners, which is one of the risk factors for HPV infection [15,16,17]. With both characteristics, it can be ably asserted that 80% of the women sampled were at a risk of developing cervical dysplasia that could go undetected and progress to invasive cervical cancer.

Besides, the fact that many studies reported lower prevalence of cervical cancer screening than that observed among women in the fishing communities in Wakiso district implies that there is still a challenge towards achievement of 70% screening as stated by WHO [1]. On the other hand, the differences in screening behavior could be on two main grounds; none of the studies that reported lower screening prevalence was conducted in fishing communities and therefore that there was a difference in risk perceptions between populations, with those in fishing communities perhaps having higher risk perceptions and odds of seeking screening services. Secondly, at the time this study was conducted (2021), the ministry of health in Uganda had intensified cervical cancer screening, HPV vaccination and HIV testing programs in fishing communities although with no efforts. This had been done as part of the plan to implement and achieve the triple intervention strategy in the country, yet at the time when other researchers conducted their study, the triple intervention had already been rolled out [23,29,26].

Globally, cervical cancer screening programs and related behavior change communication had already been strengthened [2]. In contrast to the study findings, reported by one scholar cervical cancer screening prevalence as high as that for studies in developed countries, and yet the study was conducted at the Uganda Cancer Institute, which is the country's specialized cancer treatment center where screening services are provided [30]. It was therefore overt that most of the women that were sampled at that facility had been screened.

The higher prevalence of cervical cancer screening in those studies notwithstanding, there were other concerns with the screening behavior of women in the fishing communities of Wakiso dis-

Table 5: Assessment of cervical cancer screening characteristics among the women sampled

Variable	Category	Frequency	%
Ever screened for cervical cancer since turning 25 years old			
	Yes	68	23.2
	No	225	76.8
	Total	293	100.0
Duration since screening for cervical cancer			
	Three years	6	8.8
	More than three years	62	91.2
	Total	68	100.0
Had follow up screening done if more than three years			
	Yes	12	19.4
	No	50	80.6
	Total	62	100.0

trict. Among the few who had screened, more than three quarters of them had not had a follow up screen at three years. For a population that is known to be at a high risk for cervical cancer, such screening behavior reduces the preventing effect that screening would have given that without follow up screening or with a prolonged follow up screening interval, HPV infections could occur following a previous screening exercise, and cause high grade lesions that could go undetected. That is why sero-negative women have to screen tri-annually and the positive ones, annually, and yet that wasn't the case in the fishing communities, although currently the interval had been increased to 3 years for HIV positive and 5 years for the negative [31].

5. Conclusion:

The results of the study showed that Cervical cancer screening prevalence among women in the fishing communities is low given their risky sexual behaviors and high risk of HIV infection which are independent risk factors for cervical neoplasia.

5.1. *Study limitation:*

The main limitation that the study had was the reliance on self-reported for all responses pro-

vided, including those regarding cervical cancer screening. It was not possible to carry out documentary verification since most women who claimed that they had screened had not been asked to prepare their medical records prior being sampled. Therefore, the findings on cervical cancer screening prevalence are therefore reliable and credible with minimal to no over or underestimation.

6. Recommendation:

The study recommends that the Ministry of Health in Uganda should have more healthcare workers who able to speak the local dialects of women in fishing communities, especially on issues concerning cervical cancer prevention if we are to reduce cervical cancer deaths in the country.

7. Acknowledgement

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8. List of Abbreviations.

CC   Cervical Cancer
CCS   Cervical Cancer Screening
DSF   Disease Free Survival
HIV   Human Immunodeficiency Virus
HPV   Human Papilloma Virus
HPV-DNA   Human Papilloma Virus – Deoxyribose Nucleic Acid
UCI   Uganda Cancer Institute
UN   United Nations
VIA   Visual Inspection with Acetic Acid
WHO   World Health Organization
WLHIV   Women living with HIV

9. Source of funding.

10. Conflict of interest:

The authors declare that they have no competing interests.

11. Publisherr details:

12. References:

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