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# Factors Influencing the Uptake of HIV Testing Services among Youths living at Lake Katwe Landing Site, Kasese District

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## ABSTRACT

HIV remains one of the most serious global health threats. Globally, 38 million people are living with HIV, 68% of these in Sub-Saharan Africa. The main objective was to assess the factors influencing the uptake of HIV testing services among youths living at the Lake Katwe landing site, Kasese district. A health facility-based descriptive cross-sectional study design among 50 youths living at Lake Katwe landing site, Kasese district. Participants were chosen using a snowball sampling method. The data was collected by using a pretested interviewer semi-structured questionnaire. The collected data was analyzed at two levels (univariate and bivariate) using SPSS version 22.0. Out of 50 participants, it was found that; 40 (80.0%) of the participants had ever tested for HIV, 10(20.0%) had never tested for HIV 34(68.0%) had less than twice tests, 6(12.0%) tested more than twice in a year. Several factors were significantly associated with the uptake of HIV testing services and these include; the participant's age (P-value=0.001\*), marital status (P-value=0.003\*), participant's occupation (0.009\*), Participant's preferred site for HIV testing (P-value=0.013\*), Participants' trust towards health workers (P-value=0.000\*), Types of services wanted by the participants and Waiting hours when getting the HIV testing services (P-value=0.043\*) respectively and Quality of the services provided (P-value=0.033\*). Conclusively, the uptake of HIV testing services was low at 20.0% among youth and this low uptake was among youths who were singles and unemployed, however, participants who preferred private clinics and self-testing, lack of trust towards health workers and the quality of the services provided by health facilities were significantly associated with the uptake of HIV testing services.

**Keywords:** Influencing Factors, HIV Testing Services, Youths, Health Care Services

## INTRODUCTION

HIV remains one of the most serious global health threats. Globally, 38 million people are living with HIV, 68% of these in Sub-Saharan Africa. [1]. Between 2010 and 2019, there had been a 23% decline in new HIV infections globally. By keeping the focus on the needs and rights of key populations, we can prevent new HIV infections and ensure those living with AIDS are not left behind[1]. Women and girls comprise 63% of HIV cases, with adolescent girls and young women three times more likely to be infected than men and boys of the same age. In the United Republic of Tanzania, for example, less than half of female youth with HIV infection are aware of their status, [2]. 22% drop in HIV testing during the COVID-19 pandemic[3]. For people with undiagnosed HIV, testing is the first step in maintaining a healthy life and preventing HIV transmission.[2]. CDC recommends that everyone between the ages of 13 and 64 get tested for HIV at least once as part of routine healthcare [2]. In 2016, WHO recommended HIV self-testing as an alternative to traditional HIV testing services given its potential to expand HIV testing access to young people who are at risk. The burden of HIV and AIDS necessitates the implementation of various prevention strategies[4]. HTS is one of the main strategies for preventing the spread of the disease, and it has been introduced in many settings to help individuals become aware of their HIV status [5]. HIV testing is a window for all HIV-related care and treatment services and an essential step in achieving "the UNAIDS 90-90-90 targets" among all age groups [6]. HIV testing is a critical entry point for both prevention and treatment. However, only a minority of youth have ever been tested [7]. In the United Republic of Tanzania, for example, less than half of female youth

with HIV infection are aware of their status, [8]. Youth in Uganda contribute more than 50% of the total population, and are thus an important population to target in HIV prevention given this high HIV prevalence, [4, 9]. In Uganda, only 39.4% of older youth (15-35 years) had tested and received their HIV results in the past 12 months [10]. This has prompted the government of Uganda through the Ministry of Health to adopt both community-based and facility-based HIV testing to scale up HIV testing. In Uganda, the prevalence of HIV among youth is 3.3%, and yet youth are keys to achieving HIV targets in Uganda [11]. In Kasese District, 11.5% of the population is affected by HIV/AIDS, which is much higher than the national average of 7.5% [12]. Although HIV voluntary counseling and testing uptake among the youth is still poor at 2% the factors responsible for this low uptake are not entirely clear. With extensive efforts, the uptake of HIV testing among young women is relatively low. Understanding factors associated with HIV testing uptake in this population is critical.

## METHODOLOGY

### Study Design and Rationale

The study was conducted through a quantitative survey with a cross-sectional research design because it aided in rapid data collection on the factors influencing the uptake of HIV testing services among youths living at Lake Katwe Landing and allowed a snapshot interaction with a small number of participants at a point in time.

### Study Setting and Rationale

The study was carried out at Lake Katwe landing site which is located in Lake Katwe Sub-County in Busongora County Kasese district. Lake Katwe's landing site has 7 parishes and 14 villages. It has six Government-aided primary schools and one secondary school. Furthermore, it has six health centers 11's but one does not receive drugs from national medical stores. The main economic activities of the population are fishing, animal rearing, cultivation, and trading. Kasese District is found in South Western Uganda. It's chosen the fact that it's in a rural, hard-to-reach area with no research evidence-based information that has been established yet all youths are at risk of HIV.

### Study Population and Rationale

The study targeted the youth living at the Lake Katwe landing site during the data collection period. This was because they were the most vulnerable people and very sexually active age groups which made them more prone to HIV/AIDS.

### Sample Size Determination

Sample size was calculated using the Kish Leslie method of 1965 for calculating sample size for cross-sectional studies [13].

$$n = \frac{Z^2 PQ}{(e)^2}$$

n= Desired sample size

Z is the Z score corresponding to 95% interval which is 1.96.

P=from previous research done, 30% (0.30) HIV testing uptake report at Lake Katwe landing sites

Q= 1-p =1-0.30= 0.70

The level of error expected which is 5% (0.05)

Therefore, by substitution in the formula,

$$n = \frac{1.96^2 * 0.30 * 0.70}{(0.05)^2}$$

$$n = \frac{0.806736}{(0.05)^2}$$

368.79

369 Participants

Since the total population is less than 10,000 and the data collection period was limited. The researcher used a finite population correction for proportion to calculate the exact sample size. Therefore, it was calculated as follows;

$nf = \frac{nxN}{n+N}$  Where n=calculated sample size, nf=exact sample size and N=sample population of 40

$$nf = \frac{369 \times 40}{369 + 40} \\ = 36.088$$

Thus, the sample size was 37 participants. The researcher opted to recruit 50 participants to calculate for omission of errors.

### **Sampling Procedure**

The sampling of participants was carried out using the probability sampling method particularly simple random sampling to reduce bias. The number of youth present at the time of data collection were enlisted, an equal number of papers were assigned yes or no and folded then mixed in a box, and then each youth was given a chance to pick one. Those who randomly picked yes were given papers to fill, those who picked no were not eligible to participate in the study, and when the sample size was not realized, another round of picking was assigned yes or no by other group who had not been selected in the first round.

### **Inclusion Criteria**

The researcher included all youths living at Lake Katwe landing sites at the time of data collection and have consented to participate in the study.

### **Exclusion Criteria**

All youth who did not consent were not mentally and physically well to withstand the interview.

### **Definition of Variables**

#### **Dependent Variables**

HIV testing services uptake among youths

#### **Independent Variables**

Individual-related factors influencing the uptake of HIV testing services like age, sex, educational level, marital status, occupation, religion, income level, fear, and disclosure issues.

Health-related factors influencing the uptake of HIV testing services like access to the services, cost of the services, waiting time, confidentiality towards health workers, quality of HTS, and the location of HTS.

### **Research Instruments**

An interviewer-administered semi-structured questionnaire was used as a tool for gathering information. Questionnaires were divided into 3 parts. The first section determined the individual characteristics of the respondents, the second part determined the uptake prevalence of HTS and the third part determined the health facility-related factors influencing the uptake of HIV testing services among youths living at Lake Katwe landing site. Open and closed-ended questions were used to achieve the three sections mentioned. Self-administered questionnaires were applied to those who knew English since some could read and write with ease while for those who didn't know English, an interpreter was sought who helped to guide the participants. The researcher carried out the pre-testing among five youths who were students at Kampala International University-Western Campus (KIU-WC). The findings helped the researcher to adjust the questionnaires to ensure their correctness, conciseness, and validity. The questionnaires were adopted from previous literature and my supervisor.

### **Data Collection Procedure**

Written permission to carry out the study at the Lake Katwe landing site was obtained from the KIU-SONs Research Ethical Committee (REC) and was presented to the local chairperson of the Lake Katwe landing site. Permission to participate in the study was obtained from the participants. Participants who consented to participate in the study were interviewed using the interviewer-administered questionnaire which was written in English but well translated by the researcher to local language to favor those who didn't understand English. After completing, the participants were thanked for participating in the study and they were reassured that all the information provided would be kept confidential and safe. The process of data collection lasted for two weeks.

### **Data Management and Analysis**

Quantitative data was collected using semi-structured questionnaires. Filled questionnaires were checked for accuracy, validity, any missing data, and competencies daily after data collection at the end of the day. Data were coded manually and entered correctly in the computer. The questionnaires were kept properly in a lock and key to avoid access by those not authorized and losses.

### **Data Analysis and Presentation**

Data were analyzed using the SPSS Statistical Package for Social Sciences (SPSS) version 22.0. Univariate analysis for frequencies and percentages was done and presented in frequency tables, pie charts, and bar graphs. Bivariate analysis using Chi-square was done to determine the factors influencing the uptake of HIV testing among youth. Statistical significance factors were assessed using a P-value less than 0.05.

### **Ethical Consideration**

A letter of introduction was obtained from KIU-SONs (REC) to permit the researcher to carry out the research. All the participants who participated in the study were selected based on informed consent. The study was voluntary and information was kept private and confidential. Participants' anonymity was kept. The study was conducted while upholding the professional code of conduct in a manner that would not compromise the scientific inclination of research. Caretakers may not give information for fear of disclosure. This was solved by careful explanation and by assuring them of confidentiality and privacy.

## RESULTS

### Characteristics of the Participants Individual-Related Factors of the Participants

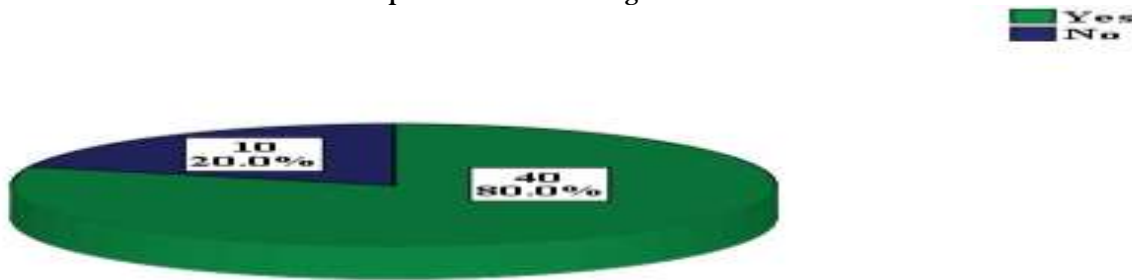
**Table 1: Showing the individual related factors of the participants (N=50)**

Variables	Frequency (N)	Percentage (%)
<b>Participants' age groups in years</b>		
<20	18	36.0
≥20	32	64.0
<b>Sex</b>		
Male	22	44.0
Female	28	56.0
<b>Marital status</b>		
Single	24	48.0
Married	24	48.0
Divorced	1	2.0
Widowed	1	2.0
<b>Education level</b>		
None	11	22.0
Primary	23	46.0
Secondary	12	24.0
Tertiary	4	8.0
<b>Occupation</b>		
Non-employed	26	52.0
Self-employed	7	14.0
Formally employed	6	12.0
Peasant farmer	11	22.0
<b>Religion</b>		
Christian	37	74.0
Moslem	13	26.0
<b>Individual monthly income</b>		
<100,000	25	50.0
≥100,000	25	50.0
<b>Participant's problem with disclosing the HIV status</b>		
Yes	22	46.0
No	28	54.0
<b>Fear about HIV testing results</b>		
Yes	16	32.0
No	34	68.0

According to Table 1 above, the mean age of the participants was 25.84 with a median age of 24.00 (S.D ± 7.043). Majority of the participants 32(64.0%) were aged 20 years and above whereas only 18(36.0%) were below 20 years of age. More than a half 28(56.0%) being female and the least 22(44.0%) were male, equal number 24(48.0%) were single and married respectively whereas only 1(2.0%) were widowed and divorced, most 23(46.0%) of the participants had attained primary level of education whereas only 4(8.0%) had at least reached tertiary level. About 26(52.0%) of the participants were non-employed as compare top only 6 who were formally employed. Nearly ¾ 37(74.0%) of the participants were Christian whereas only 13(26.0%) were Moslem. However, 28(54.0%) of the participants reported having no problem in disclosing their HIV status as only 22(44.0%) reported to have problem with reporting their

HIV status, this contributed to majority 34(68.0%) portraying no fear regarding their HIV testing results as compare to only 16(32.0%) reported having fear regarding their HIV testing results.

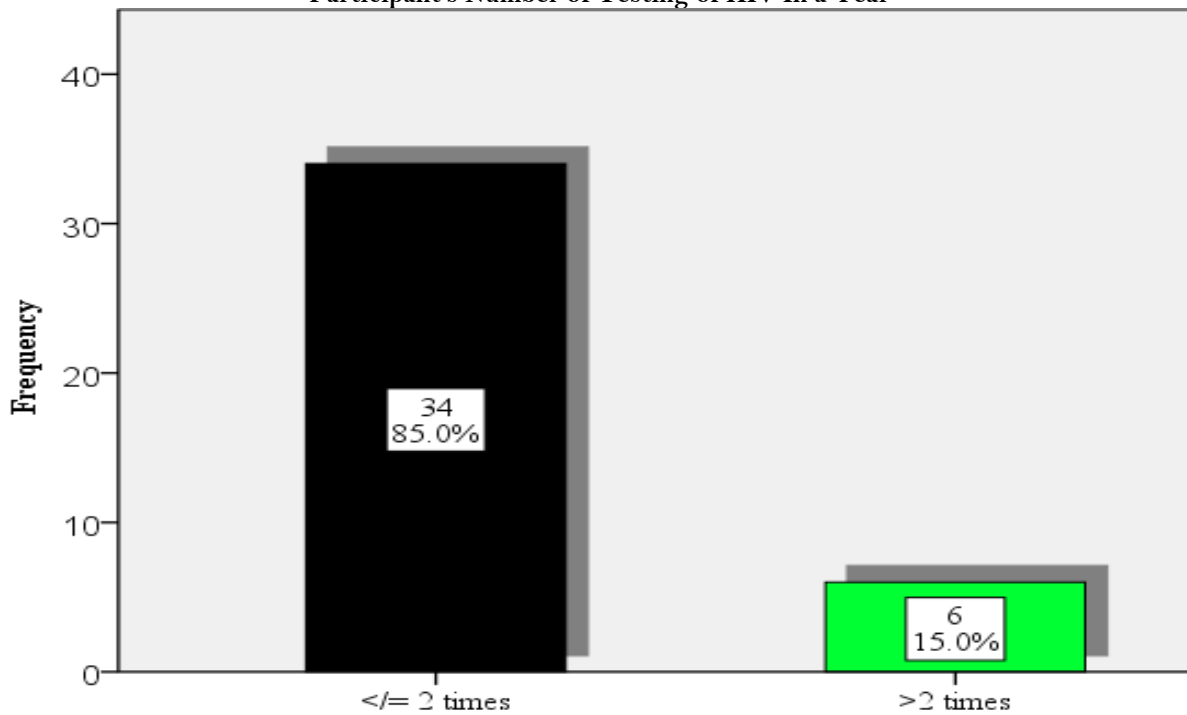
**Uptake of HIV Testing Services**



**Figure 1: Showing the uptake of HIV Testing Services**

According to the figure above, the majority 40(80.0%) of the participants had ever tested for HIV as compared to 10 (20.0%) who never tested for HIV.

**Participant's Number of Testing of HIV In a Year**



**Figure 2: Showing Participant's numbering of testing of HIV in a year**

**NB: Missing variable is equal to 10 (20.0%) participants**

More than ¾ 34(68.0%) of the participants have only tested for HIV less than or equal to twice whereas only 6(12.0%) have at least tested for more than twice a year.

## Bivariate Analysis between the Individual Related Factors of the Participants and the Uptake of the HIV Testing Services

**Table 2: Showing the bivariate analysis between the individual related factors of the participants and the uptake of the HIV testing services**

Variables	Uptake of HIV Testing Services		P-value
	YES (40)	NO (10)	
	N (%)	N (%)	
<b>Participants' age groups in years</b>			
<20	10(25.0%)	8(80.0%)	<b>0.001*</b>
≥20	30(75.0%)	2(20.0%)	
<b>Sex</b>			
Male	16(40.0%)	6(60.0%)	0.254
Female	24(60.0%)	4(40.0%)	
<b>Marital status</b>			
Single	14(35.0%)	10(100.0%)	<b>0.003*</b>
Married	24(60.0%)	0(0.0%)	
Divorced	1(2.5%)	0(0.0%)	
Widowed	1(2.5%)	0(0.0%)	
<b>Education level</b>			
None	10(25.0%)	1(10.0%)	0.325
Primary	16(40.0%)	7(70.0%)	
Secondary	10(25.0%)	2(20.0%)	
Tertiary	4(10.0%)	0(0.0%)	
<b>Occupation</b>			
Non-employed	16(40.0)	10(100.0%)	<b>0.009*</b>
Self-employed	7(17.5%)	0(0.0%)	
Formally employed	6(15.0%)	0(0.0%)	
Peasant farmer	11(27.5%)	0(0.0%)	
<b>Religion</b>			
Christian	30(75.0%)	7(70.0%)	0.747
Moslem	10(25.0%)	3(30.0%)	
<b>Individual monthly income</b>			
<100,000	19(47.5%)	6(60.0%)	0.480
≥100,000	21(52.5%)	4(40.0%)	
<b>Participant's problem of disclosing the HIV status</b>			
Yes	19(47.5%)	3(30.0%)	0.319
No	21(52.5%)	7(70.0%)	
<b>Fear about HIV testing results</b>			
Yes	14(35.0%)	2(20.0%)	0.363
No	26 (65.0%)	8(80.0%)	

**\*Significant variable, P-value**

According to Table 2 above, Bivariate analysis was performed to generate Chi square. The confidence interval was set at 95% and a P-value of <0.005 was considered to be statistically significant. This study found that; participant's age (P-value=0.001\*), marital status (P-value=0.003\*), participant's occupation (0.009\*) were found to be statistically associated with uptake of HIV testing services where majority 8(80.0%) of the participants who didn't test for HIV were below 20 years of age, all 10(100.0%) of the participants who did not test for HIV never got married, participants who were not employed 10(100.0%) never tested for HIV. The followings factors were not significantly associated with uptake of HIV testing services, individual monthly income where participants whose average monthly income were less than 100,000 didn't test for HIV, male participants 6(60.0%) didn't test for HIV, the study also showed that 7(70.0%) who had attained primary level of education never tested for HIV.

**Health Facility Related Factors**  
**Table 3: Showing the health facility related factors**

Variables	Frequency (N)	Percentage (%)
<b>Participants' preferable site for HIV testing</b>		
Government facility	25	50.0
Private clinics	12	24.0
Outreaches	2	4.0
Self-testing	11	22.0
<b>Distance from the HIV testing site</b>		
≤ 2KM	28	56.0
>2KM	22	44.0
<b>Payment for HIV testing</b>		
Yes	15	30.0
No	35	70.0
<b>Participants' trust towards health workers</b>		
Yes	38	76.0
No	12	24.0
<b>Waiting hours when getting the HIV testing services</b>		
≤ 2 hours	41	82.0
>2 hours	9	18.0
<b>Types of services wanted by the participants</b>		
Yes	41	82.0
No	9	18.0
<b>Availability of all the services at all times</b>		
Yes	35	70.0
No	15	30.0
<b>Quality of the services provided</b>		
Very good	11	22.0
Good	32	64.0
Fair	6	12.0
Poor	1	2.0

From Table 3 above, the majority 25(50.0%) of the participants reported government facility as their preferred site for testing for HIV as compared to only 2(4.0%) who preferred to test for HIV during outreaches, most of the participants 28(56.0%) did reside near the HIV testing site whereas 22(44.0%) reported to have lived far away from the HIV testing site, majority 35(70.0%) said the testing is free of any payment whereas 15(30.0%) reported about payment for the services. About  $\frac{3}{4}$  38(76.0%) reported trust in health workers regarding their privacy as compared to only 12(24.0%) who reported a negative attitude towards health worker's trust, more than  $\frac{1}{2}$  41(82.0%) said they always get the services within 2 hours of reporting to the testing sites. In contrast, only 9(18.0%) reported to always spends more than 2 hours before getting the services, as well 41(82.0%) said they always get the exact services they always want whereas only 9(18.0%) reported not getting the types of services which they want. More than  $\frac{1}{2}$  35(70.0%) said all the services are available all the time while only 15(30.0%) said these services are not always there for them, about 32(64.0%) of the participants graded the services to be good while only 1(2.0%) graded the services to be poor.

**Bivariate Analysis between the Health Facility-Related Factors and the Uptake of the HIV Testing Services**  
**Table 4: Showing bivariate analysis between the health facility-related factors and the uptake of the HIV testing services**

Variables	Uptake of HIV Testing Services		P-value
	YES (40)	NO (10)	
	N (%)	N (%)	
<b>Participants' preferable site for HIV testing</b>			
Government facility	23(57.5)	2(20.0)	<b>0.013*</b>
Private clinics	9(22.5)	3(30.0)	
Outreaches	0(0.0)	2(20.0)	
Self-testing	8(20.0)	3(30.0)	
<b>Distance from the HIV testing site</b>			
≤ 2KM	22(55.0)	6(60.0)	0.776
>2KM	18(45.0)	4(40.0)	
<b>Payment for HIV testing</b>			
Yes	12(30.0)	3(30.0)	1.000
No	28(70.0)	7(70.0)	
<b>Participants' trust towards health workers</b>			
Yes	35(87.5)	3(30.0)	<b>0.000*</b>
No	5(12.5)	7(70.0)	
<b>Waiting hours when getting the HIV testing services</b>			
≤ 2 hours	35(87.5)	6(60.0)	<b>0.043*</b>
>2 hours	5(12.5)	4(40.0)	
<b>Types of services wanted by the participants</b>			
Yes	35(87.5)	6(60.0)	<b>0.043*</b>
No	5(12.5)	4(40.0)	
<b>Availability of all the services at all times</b>			
Yes	30(75.0)	5(50.0)	0.123
No	10(25.0)	5(50.0)	
<b>Quality of the services provided</b>			
Very good	7(12.5)	4(40.0)	<b>0.033*</b>
Good	29(72.5)	3(30.0)	
Fair	4(10.0)	2(20.0)	
Poor	0(0.0)	1(10.0)	

**\*Significant variable, P-value**

According to Table 4 above, Bivariate analysis was performed to generate Chi square. The confidence interval was set at 95% and a P-value of <0.005 was considered to be statistically significant. This study found that; Participants' preferable site for HIV testing (P-value=0.013\*), Participants' trust towards health workers (P-value=0.000\*), Types of services wanted by the participants and Waiting hours when getting the HIV testing services (P-value=0.043\*) respectively and Quality of the services provided (P-value=0.033\*) were found to be statistically associated with uptake of HIV testing services where majority 3(30.0%) of the participants who didn't test for HIV reported private clinic and self-testing respectively, mostly 7(70.0%) of the participants who did not test for HIV portrayed no trust towards health workers, participants who spent less than 2 hours waiting for the services and those who said yes towards the types of the services 6(60.0%) respectively as well those who graded the services to be very good 4(40.0%) never tested for HIV. The followings factors were not significantly associated with uptake of HIV testing services, distance from the testing site where participants who resided near the testing site 6(60.0%) didn't test for HIV, male participants 6(60.0%) didn't test for HIV, the study also showed that 7(70.0%) who didn't pay for the services never tested for HIV.

**DISCUSSION**

According to this study's findings, it was found that the mean age of the participants was 25.84 with a median age of 24.00 (S.D ± 7.043). Table 2 above, where majority 8(80.0%) of the participants who didn't test for HIV were



below 20 years of age. This could be due to a lack of trust towards health workers and inadequate testing sites and information regarding HIV testing services. This study's findings are in line with a similar study carried out in Gambia, where youths aged 20-24 years were taking up HIV testing services at 72% compared to those aged 15-19 years at 27% [14-16]. This study also highlighted that the majority of the participants 6(60.0%) who didn't test for HIV were male though not significant. This could be due to their engagement in various activities and their fear of disclosing their HIV status to their partners. This is in line with the study conducted in sub-Saharan Africa, where men had lower odds of HIV testing compared to women (OR=0.32;2.28-0.37), and also another study which was conducted in Rwanda agrees by Niyompano [17] where the females were more than males when it came to HIV testing at 64%. This study's findings also showed that 10(100.0%) of the single participants had never tested for HIV. This could be associated with their increased number of sexual partners, fear of disclosing their HIV status, and fear of their HIV testing results. These findings contradict a study finding in Kenya where out of 70% of participants who were single, about 30.0% of respondents had ever utilized the HCT services as well in Kenya some studies showed that 70% were single and 30% were married [18]. According to this study finding, it was found out that 7(70.0%) of the participants who had attained a primary level of education didn't test for HIV. This could be due to inadequacy in the knowledge regarding the importance of early recognition of their HIV status which instead made them not prioritize early HIV testing. This agrees with a study by Muzanyi [19] which showed that participant with higher levels of education was reported having tested twice more than those with lower levels of education, but contradicted another study which showed that adolescents who had completed their primary level of education were five times more likely to test for HIV within the past three months compared to their other counterparts who had tertiary level education. This study also highlighted that the majority of the participants 10(100.0%) who were unemployed never utilized any HIV testing services. This was attributed to lack of transport fare which hinders unemployed adolescents from reaching the health facility to seek care, thus low uptake of HIV testing. This study's findings agree with a finding by Benyumiza et al., [20] which revealed that participants who were employed were three times more likely to test for HIV compared to their counterparts who were not working. According to this study in Table 4, it showed that the majority of the participants 6(60.0%) never had trust in the health workers tested for HIV. This could be due to the negative attitude of healthcare providers. This study finding is in line with a study finding in South Africa by Kalibbala [21] which revealed that most respondents did not go for HTS due to a lack of trust in the health workers. Therefore, the relationship of trust is essential in the uptake of HTS [21]. The uptake of HIV testing in health facilities, including faith-based health facilities, has remained generally lower than that in community-based approaches [20]. This has been attributed to the fear of stigmatization, and fear over HIV confidentiality. This study also highlighted that 6(60.0%) of the participants who resided near the hospital never utilized the HIV testing services. This could be due to being aware of the health workers' attitude, and improper location of the health facility however this contradicts the findings where most participants 57.5% like being tested for HIV from the government facility due to reduced cost, however, according to Kidman [22], reported that the attitude and behavior of healthcare providers, in terms of how they relate and communicate with individuals, can influence one's willingness to utilize HTS. This study also revealed that 57.5% of the participants tested from the government health facility. This could be attributed to the low cost of the services and the availability of the services at all times which contradict a study finding that indicated that the uptake of HIV testing in health facilities, including faith-based health facilities, has remained generally lower than that in community-based approaches [23]. This has been attributed to the fear of stigmatization, and fear over HIV confidentiality. Additionally, institutional grounding towards offering comprehensive HIV testing services (HTS) to young people also constitutes a major barrier to the provision of HTS although this is not well-documented [24]. More efforts are still needed in terms of repositioning health facilities to accommodate all persons regardless of their occupation, sexual orientation, and age category. This study also highlighted that 72.5% of the participants who graded the services from the health facility as good were more likely to utilize the HIV testing services as compare to their counterparts. This could be explained by the fact that improved access to HIV treatment has the potential of saving lives [25]. However, programs offering HIV/AIDS counseling and testing require linkage and retention of care and treatment of patients who test HIV positive for positive outcomes. This corresponds to the study finding which indicated that factors such as individual and institutional biases that hinder adolescents from accessing health facilities need to be studied and addressed [26, 27].

### CONCLUSION

Conclusively, the uptake of HIV testing services was low at 20.0% among youth and this low uptake was among youths who were singles and unemployed, however, participants who preferred private clinics and self-testing, lack of trust towards health workers and the quality of the services provided by health facilities were significantly associated with the uptake of HIV testing services.

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