SJ Nursing and Midwifery Africa
Vol. 1 No. 6 (2024): June 2024 Issue
https://doi.org/10.51168/zhj7ea91
OriginalArticle

FACTORS ASSOCIATED WITH UPTAKE OF VOLUNTARY HIV TESTING AND COUNSELING SERVICES AMONG NURSING STUDENTS AT BISHOP STUART UNIVERSITY. A CROSS-SECTIONAL STUDY.

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Abstract

Background

HIV voluntary counseling and testing(VCT)services are a key route to the prevention and care of HIV/AIDS. The objective was to assess the uptake and factors associated with HIV voluntary testing and counseling among university students at Bishop Stuart University.

Methodology

A descriptive cross-sectional study was conducted among Nursing undergraduate students from the faculty of health sciences at Bishop Stuart University with a sample size of 139.

Results

A total of 139 students participated in this study 72(51.8%) male and 67 (48.2%) female. Out of these, 58(41.7%) were in the age group of 18-23. The majority of participants showed knowledge about HIV transmission and VCT. Overall the uptake of VCT was high at (94.2%)

The majority of the participants had a nearby place for HIVCT 136(97.8%), knew about the place through health workers 97(69.8%), took <5km from home to the nearest HIV testing site 93(66.9), waited for <1hour at health facility 97(69.8%) and did not pay for HIVCT 88(63.3%). This study results revealed a significant association between age X^2(df=4) =7.608, p-value = 0.017, and X^2(df=3) =3.345, P value = 0.034 with having done HIV VCT. This study revealed no significant relationship between the participants' knowledge and HIV.

Conclusion

The study showed high knowledge of VCT services, and the uptake of VCT among nursing students was found to be high. Factors that were found to be significant in the uptake of HIV VCT included knowing the place of HIV VCT, quality of services (time taken at the facility), Age, and engagement in sexual relationships.

Recommendation

More emphasis also should be put on support and care received after knowing the test results to be communicated as it helps motivate more young people towards VCT uptake.

Keywords: *Voluntary, Hiv Testing, Counseling Services, Nursing, Bishop Stuart University.*
Submitted:2024-02-12 Accepted:2024-03-10

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BACKGROUND

Globally,79.3 million people have become infected with HIV since the start of the epidemic, 36.3million people have died from HIV-related illnesses since the start of the epidemic, currently, 37.7 million people are living with HIV/AIDS, 1.5 million people have become newly infected with HIV in 2020, 28.2million people were accessing antiretroviral therapy as of 30th June 2020, 53% of people living with HIV were women and girls and 6.1 million people did not know that they were living with HIV in 2020 (UNAIDS, 2021b). In 2015, Sub-Saharan Africa had an estimated 1.3 million new infections among adults aged 15 and above. Around 4200 adolescent girls and young women aged 15-24 years become infected with HIV every week (UNAIDS, 2020). The current prevalence of HIV among adults aged 15 to 49 years in Uganda is 5.5 %(*UPHIA 2019*.). In Mbarara, the prevalence rate is 7.9% secondly to is an 18.2% prevalence in the Kalangala district (UNAIDS, 2020).

Youths are generally at elevated risk of HIV infection. An estimated 41% of new HIV infections globally occur in adolescents (UNAIDS, 2013). Adolescents in sub-Saharan

Africa (SSA) are especially vulnerable to HIV/AIDS and account for the vast majority of new infections. Three out of four adolescents (76% or 3.8 million) currently living with HIV are in SSA (UNAIDS, 2013). While some of the youth may have acquired the virus through perinatal or postnatal transmission, most of these infections result from unsafe heterosexual sex (on HIV/AIDS (UNAIDS), 2014). Early initiation of sex, low condom use, and multiple sexual partners contribute to a high risk of HIV transmission in this group. Poverty, lack of employment, and marginalization also fuel risky sexual behaviors in young people (Mkandawire et al., 2013). But despite being at high risk, most youths have never tested for HIV and therefore do not know their serostatus (World Health Organisation, 2010). In sub-Saharan Africa, only 10% and 15% of young men and women, respectively, aged 15–24 know their HIV status, far below the regional average of 40% in the general population (World Health Organization, 2013).

HIV voluntary counseling and testing (VCT) refers to the process of giving people professional counseling before and after the HIV test. HIV VCT provides people with an opportunity to learn and accept their HIV serostatus in a confidential environment with counseling and referral for ongoing emotional support and medical care(Alemie & Balcha, 2012). For those found to be HIV positive, testing provides a gateway to long-term treatment, care, and support, and for those who test negative testing allows them to evaluate their past sexual behavior and adopt safer sexual practices;(on HIV/AIDS (UNAIDS), 2014).

Globally, approximately 84% of people with HIV knew their status in 2020 the remaining 16% (about 6.0 million people) still need to access HIV services (UNAIDS, 2021a).In Sub-Saharan, over 2.7 million people took part in household surveys across 40 different countries only 50% had tested in 2020 (*Aids Map Ref.*). Uganda's population is approximately 49 million people but only 10.3 million had tested for HIV by 2015. (*THE UGANDA HIV AND AIDS REPORT* ., 2016) In 2016, a study in Ethiopia indicated nurses, apart from medical doctors, were the most affected by exposure with 58.2%, compared to 30.8% in the laboratory and 23.3% in other professions (G Kawete et al 2014)

Increasing knowledge of HIV status through HIV testing and counseling is a key route to tackling Uganda's HIV epidemic and it has been expanded with the number of people testing for HIV increasing from 5.1 million in 2012 to 10.3 million people in 2015(*THE UGANDA HIV AND AIDS REPORT* ., 2016). Testing is conducted in health facilities, community settings, and in people's homes. In recent years there has been more emphasis on promoting HIV testing and counseling services for couples in the workplace based on testing, outreach to most-at-risk groups, and mobile or mass testing, especially during the testing campaign, however, 9% of PLHIV are still unaware of their status (UNAIDS, 2020). Therefore, this study aimed to find out the factors associated with the uptake of HIV testing services by students in a tertiary institute in southwestern Uganda

METHODOLOGY

Study Design

The researcher used a descriptive cross-sectional study design that employed quantitative methods of data collection.

Study setting

The study was conducted at Bishop Stuart University Ruharo campus. BSU is a private university situated in Kakoba in Mbarara city of South Western Uganda 3.5km from Mbarara City headquarters. BSU has three campuses which include the main campus, the Ruharo campus, and the law campus with 5faculities, 15 departments, and around 152 academic staff. Ruharo campus is located 4.1km from the center of Mbarara town with courses like nursing at the bachelor's level, diploma, and midwifery at the diploma level, and public health students at bachelors and masters levels with a population of approximately 300 students

Study Population

The study population involved nursing students of Bishop Stuart University Ruharo Campus

Inclusion criteria

The study involved nursing students at Bishop Stuart University who were willing to participate in the study.

Exclusion criteria

The study excluded nursing students who were critically ill and absent at the time of data collection.

Sample Size

The sample size was estimated using the Yamane formula; Where n is the sample size,

Using taro Yamane formula 1970
Where
n= sample population
N=total population or target population
e = error (5%)
$n = N/(1+Ne^2)$
$=214/1+0.05^2$
=138 participants

Sampling Technique

The study employed stratified random sampling. Stratified random sampling is a method of sampling that involves the division of a population into smaller sub-groups known as strata. In stratified random sampling or stratification, the strata are formed based on members' shared attributes or characteristics.

Research Instruments

Researcher-administered questionnaires were used to capture the data that was adapted from a similar study done by (Irene, 2012) about factors affecting the Uptake of Voluntary Counseling and Testing Services among Youth in Rukungiri District, Uganda. The questionnaire was pretested among the 50 students at Mbarara University of Science and Technology for validity and suitability for the study population. The questionnaire has three sections namely: Sociodemographic (questions from A1-A5), individual-based factors (B1-B6), and health-related factors(c1-c5). The closed-ended questions explored the Sociodemographic factors, individual-based, and health-related factors.

Data collection procedure

After obtaining a letter of approval from the Nursing Department at Bishop Stuart University Ruharo Campus, the researcher identified eligible participants. An oral presentation about the aim of the study, voluntary participation, and confidentiality was given. The researcher with the help of research assistants clarified whatever the respondents had not understood. The researcher collected data from the willing eligible participants who consented.

The questionnaire was researcher administered together with an informed consent form. The researcher administered the questionnaire individually seeing one participant at a time. The questionnaire filling took approximately 10-15 minutes.

Measures of quality control (validity and reliability).

Validity is a measure of how well a test measures what it is supposed to measure McClung (1978) while Reliability is the extent to which a measurement gives consistent results (Wikipedia,2008).

Validity

A properly designed questionnaire was used. Back translation was done to ensure the validity of the translated questionnaire. Modifications to the questionnaire were made where necessary before data collection to minimize errors due to misunderstandings.

The questionnaires were checked by the researcher at the end of every data collection to check for completeness.

Reliability

The research instrument was Pre-tested with 30 participants at Mbarara University of Science and Technology. This was done to modify the instruments, test consistency, and also to assess if respondents had difficulties addressing certain questions.

The researcher administered the questionnaire directly as this did not allow participants to discuss questions with other people.

The data collected was carefully checked for completeness before safety storage, and attempts were made to ensure the complete filling of the questionnaire also questionnaires were given to a research expert for review.

Data Storage.

After data collection, questionnaires were kept in a box that was locked with padlocks and could only be accessed by the researcher, or any authorized person, and soft copies were kept with strong passwords for only the researcher and supervisor to access.

Data Analysis.

After data collection, Data was entered into the statistical program, Statistical Package for Social Sciences version 20 (SPSS) for analysis. Data was then presented in tables for easy interpretation. In univariate analysis, data was presented in tables using frequencies and percentages. In bivariate analysis, independent variables were compared with a dependent variable using a chi-square. A P-value of less than 0.05 was significant.

Ethical Considerations.

The proposal was approved by the supervisor after which an approval letter was obtained from the head of the department at Ruharo BSU. Informed consent was obtained from the willing participants, who were free to withdraw their participation at any time during data collection.

Confidentiality was respected throughout the study, and Utmost privacy and confidentiality were ensured. The anonymity of the respondents was ensured by not putting names anywhere on the study document. The participants were told they would have no direct benefit from the study. However, some questions would provoke some emotional or psychological feelings related to intrusion into someone's private life.

STUDY FINDINGS

Socio-demographics

The total number of respondents involved in the study was 138 yielding a response rate of 100%. The majority of the respondents were in the age range of 18-23 years (41.7%), males 51.8%, doing bachelor of nursing science (62.6%) belonged to Anglican religion (48.6%), and were single (71.9%).

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https://doi.org/10.51168/zhj7ea91
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Table 1: Demographic characteristics

Variable	Category	N(%)
Gender	1. Male	72(51.8%)
	2. Female	67(48.2%)
Age	1. 18-23	58(41.7%)
	2. 24-29	51(36.7%)
	3. 30-35	13(9.4%)
	4. 36-49	16(11.5%)
	5. >50	1(0.7%)
Course of study	1. Bachelor of Nursing Science (BNS)	87(62.6%)
	2. Bachelors of nursing completion(BNSC)	25(18.0%)
	3. Diploma of Nursing Science (direct)	5(3.6%)
	4. Diploma of Nursing (extension)	22(15.8%)
Religion	1. Catholic	58(42.0%)
	2. Anglican	67(48.6%)
	3. Moslem	8(5.8%)
	4. Others	5(3.6%)
Marital status	1. Single	100(71.9%)
	2. Married	37(26.6%)
	3. Separated/divorced	1(0.7%)
	4. Widow/widower	1(0.7%)

Uptake of HIV VCT

Overall the uptake of VCT was high at (94.2%)

Table 2: Uptake of HIV VCT

Variable	Category	N (%)
Previously Tested	Yes	130(94.2)
	No	8(5.8)

Knowledge Factors

The majority of the participants indicated that the mode of HIV/AIDS transmission is through having sexual intercourse with a person who is infected with HIV 138(100%), It Noted that one can find out if they have the virus that causes AIDS by taking an HIV test 138(100%), Noted that VCT means going for an HIV test after deciding on your own without being forced by anyone 124(90.5%), Knew the benefits of having an HIV test 131(94.9%), Indicated that people who test positive can get treatment as the benefit of VCT 91(66.4%) and had previously tested for HIV 130(94.2%)

https://doi.org/10.51168/zhj7ea91
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Table 3: Knowledge Factors

Variable	Category	N (%)
Best-known mode of HIV/AIDS transmission	Having sexual intercourse with a person who is infected with HIV	138(100%)
How can one find out if they have the virus that causes AIDS	Taking an HIV test	138(100%)
Knowledge about HIV Voluntary Counseling and Testing	Testing for HIV when someone forces you to do so but not your own decision	13(9.5%)
	Going for an HIV test after deciding on your own without being forced by anyone	124(90.5%)
Benefits of having an HIV test	Yes	131(94.9%)
	No	7(5.1%)
Benefits does a person get in going for VCT	People who test positive can get treatment	91(66.4%)
	Effective at preventing the spread from those who are positive to the negative	24(17.5%)
	It also enables positive living through referral to social groups like (TASO) and peer support groups	7(5.1%)
	Increases community awareness about HIV	11(8.0%)
	Reducing stigma among HIV/AIDS people	5(2.9%)

Health-related factors

The majority of the participants had a nearby place for HIV VCT 136(97.8%), knew about the place through health workers 97(69.8%), took <5km from home to the nearest HIV testing site 93(66.9), waited for <1hour at health facility 97(69.8%) and did not pay for HIV VCT 88(63.3%) as shown in Table 4.

Table 4: Health-related factors

Variable	Category	N (%)
A nearby place for HIV VCT	yes	136(97.8)
	no	3(2.2)
how did you know about the place	Health worker	97(69.8)
	Friends	26(18.0)
	Radio	15(10.8)
Distance from your home to the nearest HIV testing site	<5km	93(66.9)
	5-10km	39(28.1)
	>10km	7(4.3)
Waiting health facility	<1hour	98(69.8)
	1-2hours	30(19.4)
	>2hours	10(5.0)
Paid for HIV VCT	Yes	43(30.9)
	No	88(63.3)

Individual factors associated with uptake of VCT

This study results revealed a significant association between age $X^2(df=4) = 7.608$, p-value = 0.017, and $X^2(df=3) = 3.345$, P value = 0.034 with having done HIV VCT as shown in Table 5.

https://doi.org/10.51168/zhj7ea91
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Table 5: Individual factors associated with uptake of VCT

VARIABLE	CATEGORY	Having done HIV VCT		X^2	DF	PVALUE
		YES N (%)	NO N (%)			
GENDER	Male	66(93.0%)	5(7.0%)	0.415[a]	1	0.519
	Female	64(95.5%)	3(4.5%)			
AGE	18-23	50(87.7%)	7(12.3%)	7.608[a]	4	0.017*
	24-29	50(98.0%)	1(2.0%)			
	30-35	13(100.0%)	0(0.0%)			
	36-49	16(100.0%)	0(0.0%)			
	>50	1(100.0%)	0(0.0%)			
COURSE OF STUDY	Bachelor of Nursing Science (BNS)	78(90.7%)	8(9.3%)	5.135[a]	3	0.162
	Bachelors of nursing completion(BNC)	25(100.0%)	0(0.0%)			
	Diploma of Nursing Science (direct)	5(100.0%)	0(0.0%)			
	Diploma of Nursing (extension)	22(100.0%)	0(0.0%)			
RELIGION	Catholic	55(96.5%)	2(3.5%)	2.552[a]	3	0.466
	Anglican	61(91.0%)	6(9.0%)			
	Moslem	8(100.0%)	0(0.0%)			
	Others	5(100.0%)	0(0.0%)			
MARITAL STATUS	Married	37(100.0%)	0(0.0%)	3.345[a]	3	0.034*
	single	91(91.9%)	8(8.1%)			
	Separated/divorced	1(100.0%)	0(0.0%)			
	Widow/widower	1(100.0%)	0(0.0%)			

P value ≤0.05 (significant relationship)

Association of knowledge and prevalence of HIV VCT

This study revealed no significant relationship between the participants' knowledge and having done HIV VCT. Thus having done HIV VCT is independent of the participant's knowledge in this study as shown in Table 6.

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Table 6: Association of knowledge and prevalence of HIV VCT

VARIABLE	*CATEGORY*	*Having done HIV VCT*		X^2	*DF*	*P-VALUE*
		YES N (%)	**NO N (%)**			
Knowledge about HIV Voluntary Counseling and Testing	Testing for HIV when someone forces you to do so but not your own decision	13(8.6%)	2(25.0%)	2.344[a]	1	0.126
	Going for an HIV test after deciding on your own without being forced by anyone	117(91.4%)	6(75.0%)			
Benefits of having an HIV test	Yes	124(96.1%)	7(87.5%)	1.338[a]	1	0.247
	No	5(3.9%)	2(12.5%)			
Benefits does a person get in going for VCT	People who test positive can get treatment	87(68.0%)	4(50.0%)	4.324[a]	4	0.364
	Effective at preventing the spread from those who are positive to the negative	20(15.6%)	3(37.5%)			
	It also enables positive living through referral to social groups like (TASO) and peer support groups	6(4.7%)	3(12.5%)			
	Increases community awareness about HIV	11(8.6%)	0(0.0%)			
	Reducing stigma among HIV/AIDS people	4(3.1%)	0(0.0%)			

An aassociation between health-related factors and having done HIV VCT

This study revealed there was a significant relationship between knowing a place of testing $X^2(df=2) = 4.513$, p-value = 0.015, and time taken at a facility $X^2(df=2) = 8.353$, p-value = 0.038, and having done HIV VCT.

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https://doi.org/10.51168/zhj7ea91
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Table 7; Association between health-related factors and having done HIV VCT

Variable	Category	Have you been previously tested		X2	df	P value
		Yes N (%)	No N (%)			
A nearby place for HIV VCT	Yes	127(97.7%)	8(100.0%)	0.189[a]	1	0.664
	No	3(100.0%)	0(0.0%)			
How did you know about the place	Health worker	93(72.7)	3(37.5)	4.513	2	0.015*
	Friends	22(17.2%)	3(37.5%)			
	Radio	13(10.2%)	2(25.0%)			
Distance from your home to the nearest HIV testing site	<5km	87(67.4%)	5(62.5%)	0.643[a]	2	0.725
	5-10km	36(27.9%)	3(37.5%)			
	>10km	6(4.7%)	0(0.0%)			
Waiting time at the health facility	<1hour	96(78.0%)	1(12.5%)	8.353	2	0.038*
	1-2hours	27(21.9%)	0(0.0%)			
	>2hours	0(0.0%)	7(87.5%)			
Paid for HIV VCT	Yes	42(32.3%)	1(100.0)	2.062[a]	1	0.151
	No	88(67.7%)	0(0.0)			

P value ≤0.05 (significant relationship)

Discussion recommendations and conclusions

Uptake of HIV VCT

In the struggle against HIV/AIDS, VCT is seen as crucial. Knowing one's serostatus, according to some research, aids in reducing and halting the spread of the HIV/AIDS virus. (Arthur et al., 2012). The findings of this study showed overall the uptake of HIV VCT was high at (94. 2%). This could be due to the exposure to health facilities and testing sites within these students during practice onwards and having participants in the age of 15-24years which includes years of the first debut of having coitus, this could also be related to the high knowledge of knowing benefits of taking a test. Consistent with our study, similar findings were observed in a study by (Baisley et al., 2012) which showed uptake at 90.9% although this could not be a direct association because the latter was an experimental study in comparison to the former which was a crossectional study. However the results differ from uptake studies done by (Sanga et al., 2015) (29.3%), (Narin et al., 2019),(Alem et al., 2020)(37.8%), (Nigatu et al., 2021)(34.9%) showed lower percentages of HIV uptake although this could be due to the difference in the study setting and participants. Depending on the method utilized, increased awareness may boost young people's self-efficacy, which may have a different effect on test uptake.

Social demographic factors

This study showed that more females were willing to test than males, and there was a significance between uptake of HIV and age (P-value =0.017), This could be due to the first sex debut which is lower in females than males or the higher percentage of females in the nursing school. The results of this study are consistent with the few available reports on gender and age differences in HIV testing among youth in sub-Saharan Africa. (Asaolu et al., 2016) which showed that women were more willing to test than men. Those aged above 24 years were more likely to go for a VCT compared to those below a similar age. This could be due to the higher years of education and knowledge. The findings are similar to studies by (Sanga et al., 2015) which found that participants aged above 18 years were more likely to test in comparison to those below the same age and age was also a significant factor that determines the uptake of HIV VCT.

Marital status was also found as a significant factor in the uptake of HIV VCT (P=0.034), possibly as a result of exposure to marital affairs like testing before marriage and testing during antenatal visits. In Uganda, there is no formal policy requiring HIV tests before marriage, however, to be tested before getting married could be a common practice, particularly among young males who mostly undertake risky sexual behavior and might be willing to get tested before marriage. Further research is required to explain this phenomenon. These study findings conquer with results from a study by (Derebew et al., 2023) which also found marital status as a significant factor in the uptake of HIV VCT although this article was carried out in Ethiopia and among rural youth and therefore cannot be compared with nursing students who are more knowledgeable and exposed. A similar finding was observed in a study by (Fikadie et al., 2014) which found that being married (having a boyfriend) was significantly associated with the uptake of HIV VCT (P=0.001).

https://doi.org/10.51168/zhj7ea91
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Knowledge Factors

The major proportion of the respondents had high knowledge about VCT services with the majority stating that the main mode of transmission is by having sexual intercourse with a person who is infected with HIV and taking an HIV test is a major way of finding out if one has HIV. This may be brought about by the health-related background of these participants and their exposure to HIV clinics around their placement areas. These findings are similar to a study done in Tanzania whereby the majority of the respondents were found to have adequate knowledge of VCT services (Sanga et al., 2015). This might also be due to exposure to VCT education among the nursing students either in school or from ward placement as they practice which could be exacerbated by needle stick injuries and working in these HIV testing clinics. The above findings also agree with findings from a study by (Alem et al., 2020) which found that awareness was high among these study participants although it was lower in comparison to this study (71%) and a study by (Fikadie et al., 2014) which showed that respondent's comprehensive knowledge on HIV/AIDS transmission and misconception was generally high (76.2%) of them had good comprehensive knowledge of HIV/AIDS.

Health-related factors

The results from these studies show that knowing the place of HIV VCT was significantly associated with the uptake of HIV VCT (P-value=0.015). This would be attributed to convenience at any time of testing given that these participants were busy during practice. The findings agree with findings from a study done by (Irene, 2012) .these study findings also conquer with findings from a study done by (Sanga et al., 2015) which found that not knowing the place of VCT was a factor that hindered the uptake of these HIV VCT services. However, these results differ from findings from a study done by (Alem et al., 2020) which found no association between knowing a place of HIV VCT test and uptake of HIV VCT.

Waiting time at a health facility was also found as a factor that was significantly associated with the uptake of HIV VCT (P=0.038). Quality facility services are a determinant in the uptake of these services because waiting for services at the health facility is a subset of quality facility services. These results would be compared to findings from a study done by (Sanga et al., 2015) which found that poor quality of these VCT services hindered the uptake of these services. Improving the quality of services at these HIV VCT testing centers would improve the uptake of these services as this could be a major determinant among youth in the increasing uptake of the HIV VCT services

Generalizability

The findings from this study may not be generalized to the whole population of young people because the study involved only those young people who are in higher institutions and are doing health-related courses.

Limitations

The results depended on the responses of the participants and there is a high chance of recall bias

Conclusion

The study showed high knowledge of VCT services, and the uptake of VCT among nursing students was found to be high. Factors that were found to be significant in the uptake of HIV VCT included knowing the place of HIV VCT, quality of services (time taken at the facility), Age, and engagement in sexual relationships. Integration of HIV VCT centers or outreach programs through involving these student nurses in the outreach programs to fellow youth would improve the uptake of HIV VCT in other youth because uptake is already high in these students. More emphasis also should be put on support and care received after knowing the test results to be communicated as it helps motivate more young people towards VCT uptake.

Acknowledgment

First of all, I want to thank God for the gift of life, enabling me throughout my education and helping me complete my proposal. Special thanks to my parents, guardians, and friends for all the support and care given to me during the course.

I appreciate my supervisor Mr. Andrew Natwijuka for giving in his time, knowledge, and effort to supervise me throughout the process of developing and producing this dissertation.

I also extend my appreciation to my fellow students and colleagues who encouraged and supported me during the course. God bless you

LIST OF ACRONYMS

WHO- World Health Organization
UNICEF- United Nations International Children's Emergency Fund
VCT- Voluntary Testing and counseling
BSU-Bishop Stuart University
HIV-Human Immuno-deficiency virus
AIDS-Acquired immune deficiency syndrome
UNAIDS- The Joint United Nations Programme on HIV/AIDS
UPHIA –Uganda Population-Based HIV Impact Survey
SSA- Sub-Saharan Africa
PLHIV- People Living with HIV

Source of funding

No funding was received.

Conflict of interest

The authors have no competing interests to declare.

REFERENCES

1) *Aids Map Ref*. (n.d.).
2) Alem, A. T., Sisay, M. M., & Alemayehu, A. M. (2020). Factors affecting voluntary HIV/AIDS counseling and testing service utilization among youth in Gondar city, Northwest Ethiopia. *HIV/AIDS - Research and Palliative Care*, *12*, 667–673. https://doi.org/10.2147/HIV.S267494
3) Alemie, G. A., & Balcha, S. A. (2012). VCT clinic HIV burden and its link with HIV care clinic at the University of Gondar hospital. *BMC Public Health*, *12*(1), 1010. https://doi.org/10.1186/1471-2458-12-1010
4) Arthur, G., Nduba, V., Forsythe, S., Mutemi, R., Odhiambo, J., & Gilks, C. (2012). Behavior change in clients of health center-based voluntary HIV counseling and testing services in Kenya. *Sexually Transmitted Infections*, *83*(7), 541 LP – 546. https://doi.org/10.1136/sti.2007.026732
5) Asaolu, I. O., Gunn, J. K., Center, K. E., Koss, M. P., Iwelunmor, J. I., & Ehiri, J. E. (2016). Predictors of HIV testing among youth in sub-Saharan Africa: A cross-sectional study. *PLoS ONE*, *11*(10), 1–12. https://doi.org/10.1371/journal.pone.0164052
6) Baisley, K., Doyle, A. M., Changalucha, J., Maganja, K., Watson-Jones, D., Hayes, R., & Ross, D. (2012). Uptake of Voluntary Counselling and Testing among Young People Participating in an HIV Prevention Trial: Comparison of Opt-Out and Opt-In Strategies. *PLOS ONE*, *7*(7), e42108. https://doi.org/10.1371/journal.pone.0042108
7) Derebew, B., Mola, M., Kalyankar, V. B., Padwal, N. D., Chauhan, N. M., Humbe, A. S., & Hajare, S. T. (2023). Determination of knowledge, attitude, and practice of voluntary counseling testing on HIV among youths from Tepi Town, Ethiopia. *PEC Innovation*, *2*, 100102. https://doi.org/https://doi.org/10.1016/j.pecinn.2022.100102
8) Fikadie, G., Bedimo, M., & Alamrew, Z. (2014). Prevalence of Voluntary Counseling and Testing Utilization and Its Associated Factors among Bahirdar University Students. *Advances in Preventive Medicine*, *2014*, 1–9. https://doi.org/10.1155/2014/906107
9) Irene, M. (2012). Factors Affecting Uptake of Voluntary Counseling and Testing Services Among Youth in Rukungiri District. *Dissertation Submitted to Makerere University School of Public Health in Partial Fulfillment for the Award of the Degree of Master of Public Health*.
10) Mkandawire, P., Tenkorang, E., & Luginaah, I. N. (2013). Orphan Status and Time to First Sex Among Adolescents in Northern Malawi. *AIDS and Behavior*, *17*(3), 939–950. https://doi.org/10.1007/s10461-011-0120-y
11) Narin, P., Yamamoto, E., Saw, Y. M., Net, N., Inthaphatha, S., Kariya, T., & Hamajima, N. (2019). Factors associated with HIV testing among the general male population in Cambodia: A secondary data analysis of the Demographic Health Survey in 2005, 2010, and 2014. *PLoS ONE*, *14*(7), 1–16. https://doi.org/10.1371/journal.pone.0219820
12) Nigatu, M., Kabeta, T., Taye, A., & Belina, M. (2021). HIV voluntary counseling and testing uptake and associated factors among Ethiopian youths: evidence from the 2016 EDHS using multilevel modeling. *BMC Infectious Diseases*, *21*(1), 334. https://doi.org/10.1186/s12879-021-06021-x
13) on HIV/AIDS (UNAIDS), J. U. N. P. (2014). The gap report. *Geneva: UNAIDS*. https://doi.org/http://www.unaids.org/en/resources/documents/2014/20140716_UNAIDS_gap_report
14) ONUSIDA. (2017). UNAIDS, 2020. *Program on HIV/AIDS*, 1–248. http://www.unaids.org/sites/default/files/media_asset/20170720_Data_book_2017_en.pdf
15) Sanga, Z., Kapanda, G., Msuya, S., & Mwangi, R. (2015). Factors influencing the uptake of Voluntary HIV Counseling and Testing among secondary school students in Arusha City, Tanzania: A cross-sectional study Health behavior, health promotion, and society. *BMC Public Health*, *15*(1), 1–9. https://doi.org/10.1186/s12889-015-1771-9
16) *THE UGANDA HIV AND AIDS COUNTRY PROGRESS REPORT JULY 2015-JUNE 2016*. (2016). *JUNE*.
17) Uganda AIDS Commission. (2017). Uganda Population-Based HIV Impact Assessment. *Uphia*, *August 2017*, 62–65. https://reliefweb.int/sites/reliefweb.int/files/resources/UPHIA Uganda factsheet.pdf
18) UNAIDS. (2021a). Global HIV & AIDS statistics — Fact sheet | UNAIDS. In *Unaids* (pp. 2020–2022). https://www.unaids.org/en/resources/fact-sheet
19) UNAIDS. (2021b). UNAIDS, 2021. In *Unaids* (pp. 2020–2022). https://www.unaids.org/en/resources/fact-sheet
20) UNAIDS & MOH Uganda, 2018. (2018). *UGANDA AIDS REPORT 2019: Theme " Enhancing HIV Mainstreaming towards ending*

AIDS as a Public Health threat in Uganda by 2030 .” JUNE, 80.
21) United Nations Programme on HIV/aids. UNAIDS. (2021). *UNAIDS data 2021*. 4–38.
22) *UPHIA 2019*. (n.d.). https://dc.sourceafrica.net/documents/120759-UPHIA-Final-Report-Revise-07-11-2019-Final-for-Web.html
23) World Health Organization. (2013). HIV and Adolescents: Guidance for HIV Testing and Counselling and Care for Adolescents Living with HIV. Recommendations for a Public Health Approach and Considerations for Policy-Makers and Managers. *WHO Publications*, 100.

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