LEVEL AND FACTORS INFLUENCING THE UPTAKE OF HIV SELF-TESTING AMONG YOUNG PEOPLE AGED (15-24YEARS) IN SELECTED HEALTH FACILITIES IN MUKONO MUNICIPALITY

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A Centre of Excellence in the Heart of Africa

DECLARATION

I, **Annah Kukundakwe** hereby declare that this research report submitted to the School of Nursing & Midwifery in partial fulfillment for the award of a Master of Public Health-health Leadership of Uganda Christian University has never been presented to any academic institution by anyone in full or part for the award of a degree. The work I have presented in this research proposal is my own and any other materials contained herein.

Signature of Student:

Date: April 25, 2025

SUPERVISOR'S APPROVAL

I hereby confirm that this research report on Level and Factors Influencing the Uptake of HIV Self-Testing Among Young People Aged (15-24years) in selected health facilities in Mukono Municipality has been developed under my close supervision. I further confirm that the research report is submitted with my approval.

Signature Date: **April, 25, 2025**

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ABBREVIATIONS AND ACRONYMNS

AIDS	Acquired Immune Deficiency Syndrome
AOR	Adjusted Odd Ratio
ART	Antiretroviral Therapy
CDC	Centre for Disease control and Prevention
eMTCT	Elimination of Mother to Child HIV Transmission
HC	Health Centre
HIV	Human Immunodeficiency Virus
HIVST	HIV Self-Testing
IDUs	Injectable Drug Users
KII	Key Informant Interview
MARPS	Most at Risk Populations
MoH	Ministry of Health
MSM	Men who have Sex with Men (MSM)
PGD	Participatory Group Discussion
PrEP	Pre-Exposure Prophylaxis
STDs	Sexually Transmitted Diseases
UNAIDS	United Nations Program on HIV/AIDS
WHO	World Health Organisation
UPHIA	Uganda Population Based HIV Impact Assessment

OPERATIONAL DEFINITIONS

Acceptability of HIVST: The number of people who undertake an HIVST after being offered the test kit.

Differentiated Service Delivery Approach: A Client -centered approach to HIV prevention, care, and treatment that targets to meet the individual needs of the patients.

Feasibility of HIVST: This is the degree to which the results from an HIVST can be trusted to detect the HIV.

HIV Self-Testing (HIVST): For this study, HIVST refers to the process in which a young person aged 15–24 years collects their own specimen (oral fluid or blood), performs a rapid HIV test in private, and interprets the results either alone or with support from a peer, health worker, or counselor.

Index Client: A client who is living with HIV, through whom healthcare workers go to reach other family members for HIV counseling and testing**.**

Most at Risk Persons: Individuals or groups of people at a particularly substantial risk of HIV transmission compared to the general population. These are groups of people that have higher than average HIV prevalence when compared to the general population.

Oraquick: A home HIV test, which is performed by taking an oral swab of the inside of the human mouth and reported to show results within the first 20 minutes.

Uptake of HIVST: An individual is offered the HIVST kit and undertakes the HIV self-test.

Young people: The World Health Organization describes young people as persons aged 15-24 years (UN 2008).

ABSTRACT

Background: HIV remains a significant public health concern globally, with young people aged 15-24 years being particularly vulnerable to new infections. Despite efforts to promote HIV testing, many young individuals still face barriers such as stigma, confidentiality concerns, and limited access to healthcare services. HIV self-testing (HIVST) has emerged as an innovative and convenient strategy that allows individuals to test themselves privately, increasing accessibility and encouraging more people to know their status. However, the uptake of HIVST among young people remains varied, influenced by multiple factors.

Objectives: This study aimed determine the level and factors influencing the uptake of HIV self-testing among young people aged (15-24years) in selected health facilities in Mukono Municipality.

Methods: A cross-sectional employing both quantitative and qualitative approaches among young people aged (15-24years) in Mukono Municipality. Face-to-face interviews using structured questionnaires with the 191 young people aged (15-24years) in Mukono Municipality. Probability simple random sampling technique was used to select the health facilities and systematic sampling was used to select the study participants. The collected data were coded, entered Excel spreadsheet, and analyzed using SPSS version 26. Data was presented in the form of text, tables and graphs. Qualitative data was analyzed using thematic content analysis. Ethical approval and permission from the district were obtained prior to the study as well as consent was obtained from each respondent before the interaction. Logistic regression analysis was used to determine the factors associated with HIV self-testing, odd ratio was used as a measure of association between the two variables and data was presented in term so text, table and pie-charts.

Results: A total of 191 study participants were interviewed with a response rate of 100%. From the study, the overall level of utilization of HIV self-Testing service was at 16.8%. Utilization of HIV self-Testing service was statistically significantly associated with not knowing how to use the HIV self-testing kit in case they needed to use it (AOR = 0.652, 95% CI: 0.107-0.951, p = 0.041), not feeling embarrassed about seeking HIV testing services, including HIV self-testing (HIVST) (AOR = 0.209, 95% CI: 0.170-0.618, p = 0.005), having two sexual partners (AOR = 3.907, 95% CI: 1.762-7.039, p = 0.002), not having a health facility or place to access HIVST kits (AOR = 0.377, 95% CI: 0.154-0.617, p = 0.024), living 6-10 km away from a health facility (AOR = 4.335, 95% CI: 1.179-8.940, p = 0.027) and not receiving health education on HIVST from any source (AOR = 0.328, 95% CI: 0.126-0.801, p = 0.036).

Conclusion: The study found that utilization of HIV self-testing services was significantly associated with factors such as not knowing how to use the HIV self-testing kit, not feeling embarrassed about seeking HIV testing services, having two sexual partners, lack of access to a health facility for obtaining HIVST kits, living 6-10 km from a health facility, and not receiving health education on HIVST. It is recommended that efforts need to be made to improve education on HIVST, increase accessibility to kits, and reduce stigma associated with seeking HIV testing to enhance uptake among young people.

CHAPTER ONE: INTRODUCTION

1.0 Background:

HIV pandemic remains a global threat. By the end of the year 2020, there were about 38 million people living with HIV worldwide; and in the same year, approximately 940,000people died of HIV related illnesses (UNAIDS,2021). HIV continues to pose a substantial danger to the country's health and development, with high rates of prevalence amongst certain groups such as teenage girls and young women, and priority populations.

HIV self-testing is defined as a process in which an individual collects their own specimen (oral fluid or blood), performs a rapid HIV test in private, and interprets the results either alone or with support from a peer, health worker, or counselor. This definition aligns with the World Health Organization's recommendation of HIVST as a safe, accurate, and effective way to reach people who may not test otherwise, including young people (WHO, 2019)

Although the Ugandan government is devoted to eradicating HIV by 2030, it is becoming increasingly apparent that this objective may not be attained unless the country addresses barriers such as legal impediments as well as issues such as human rights, stigma and discrimination, gender inequality among others. HIV self-testing (HIVST) along with all other components of self-care, is one of the most promising and innovative ways to improve access to Sexual Reproductive Health and Rights services and information, particularly HIV testing, and will go a long way towards assisting the world in reaching the 95-95 treatment targets. 90% of HIV-positive individuals know their status.

The HIV self-testing (HIVST) entails a person collecting their oral fluid and interpreting their test results; this approach allows for testing at a time and place of an individual’s choosing (WHO, 2020). HIVST has been proven to overcome barriers to facility-based testing and increase recent and frequent testing among diverse populations in different settings (Hatzold et al., 2022; Johnson et al., 2021). Numerous sub-Saharan African countries have recently expanded their HIV testing guidelines to include HIVST and are working to scale HIVST services nationally (HIVST.org, 2022; WHO, 2022).

The HIVST has the potential to particularly benefit young people that are at increased risk of HIV infection and have additional barriers to accessing traditional health services, including young people (Baral et al., 2022; Chanda, Perez-Brumer, et al., 2021; Shannon et al., 2022).

HIV self-testing is a crucial entry point for uptake of HIV prevention and treatment services (Weinhardt et al, 2022). To meet the Global ambitious UNAIDS' 95-95-95 targets of ending HIV by 2030 by ensuring that 95% of people living with HIV are tested and diagnosed, 95% of those diagnosed linked to care and enrolled on antiretroviral therapy (ART), and 95% of those on ART should be virally suppressed. With concerted effort in the last two decades of global health programming that expanded HIV testing at community and facility-based sites achieved only 79% global diagnostic coverage (UNAIDS, 2022).

This short fall in diagnostic coverage reflects considerable heterogeneity across age group and geographic region that need to be considered carefully. Young people (ages15 - 24) are less likely to access HIV testing than adults (ages25–49) (UNAIDS, 2023), and they are disproportionately affected by HIV. In 2023, an estimated one third of all new infections occurred in the15-24 age group, with 73% of new infections among youth occurring in Africa (UNAIDS, 2022). HIV self-testing (HIVST) may increase the uptake and frequency of testing for youth and others unlikely to test and has shown to be an acceptable method to learn one's HIV status without risk of self or social harm (Pettifor et al, 2020; Kumwenda et al, 2022).

The research aims, research questions and objectives, scope of the study and conceptual frame work are also presented in this chapter.

1.2 Problem statement

Uganda for long adopted a multi sectoral approach to HIV prevention with HIV testing as entry point to care and treatment among others. This is because knowing one's status is the gateway to HIV prevention through employing biomedical, structural and behavioral interventions (MoH, 2020b). In proposition to scale up prevention approaches to end the HIV pandemic, Uganda adopted the Test and Treat approach where all newly identified HIV positive clients are enrolled on Anti-Retroviral Therapy (ART), HIV self-testing, and use of Pre-exposure Prophylaxis (PrEP) for HIV negative people at high risk of acquiring HIV (WHO, 2021).

Furthermore, in 2022 Uganda's Ministry of Health launched oral rapid HIV self-testing kits, a move aimed at increasing testing rates as part of efforts to stem new infections in the country (MOH, 2022).These kits are available in public health facilities for free and on sale in private pharmacies. Recent findings on acceptability study conducted among clients from the general population seeking HIVST at Kisenyi HC IV, Kampala, an urban setting, (Nangendo et al., 2021) showed an 87% acceptability.

Despite all the above strategies, there are still persist the number of people living with

HIV/AIDS while others an aware of their HIV status especially among young people. Self-testing is still an uncommon or new intervention. According to the available statistics, only 44.8% know their status through routine counselling and testing while majority do not know their status (Kwagonzaet al, 2020). As a result of the young people not effectively embracing HIVST, they do not know status meaning they can't start treatment in time, which has led to increased transmission of HIV as it is evidenced by the high prevalence of HIV in young people in Mukono and which is estimated to be three times that of the general population at 22% overall HIV prevalence in the young people compared to 6.7% among the general population (Kwagonza et al, 2020).

According to UPHIA 2021 study, HIV prevalence in Mukono district was 7.4%, with young individuals (15-19 years at 1.1% and 20-24 years at 3.3%) being the most affected. While Uganda has made considerable strides in the fight against HIV, young people, particularly those in urban and semi-urban regions, continue to be infected at a disproportionate rate and have difficulty gaining access to services and information (Vithalani, 2023).

Nonetheless, there is still a significant need to improve case identification tactics in order to close gaps in the first 95 because awareness of HIV status among individuals living with HIV remains below 90% (the UNAIDS objective for 2020). There is a need for programmes that involve young people in HIV prevention and case-finding activities.

From the researcher's point of view, HIVST is most likely related to age, gender, fear of stigma, level of income, marital status, and accessibility of the kits, and limited client education on effective use of the kit. It is upon this back drop, that this study intends to determine the level and identify factors influencing the uptake of HIV self-testing among young people aged (15-24years) in Mukono Municipality.

1.3 Broad objective

To determine the level and factors influencing the uptake of HIV self-testing among young people aged (15-24years) in selected health facilities in Mukono Municipality.

1.3.2 Specific objectives

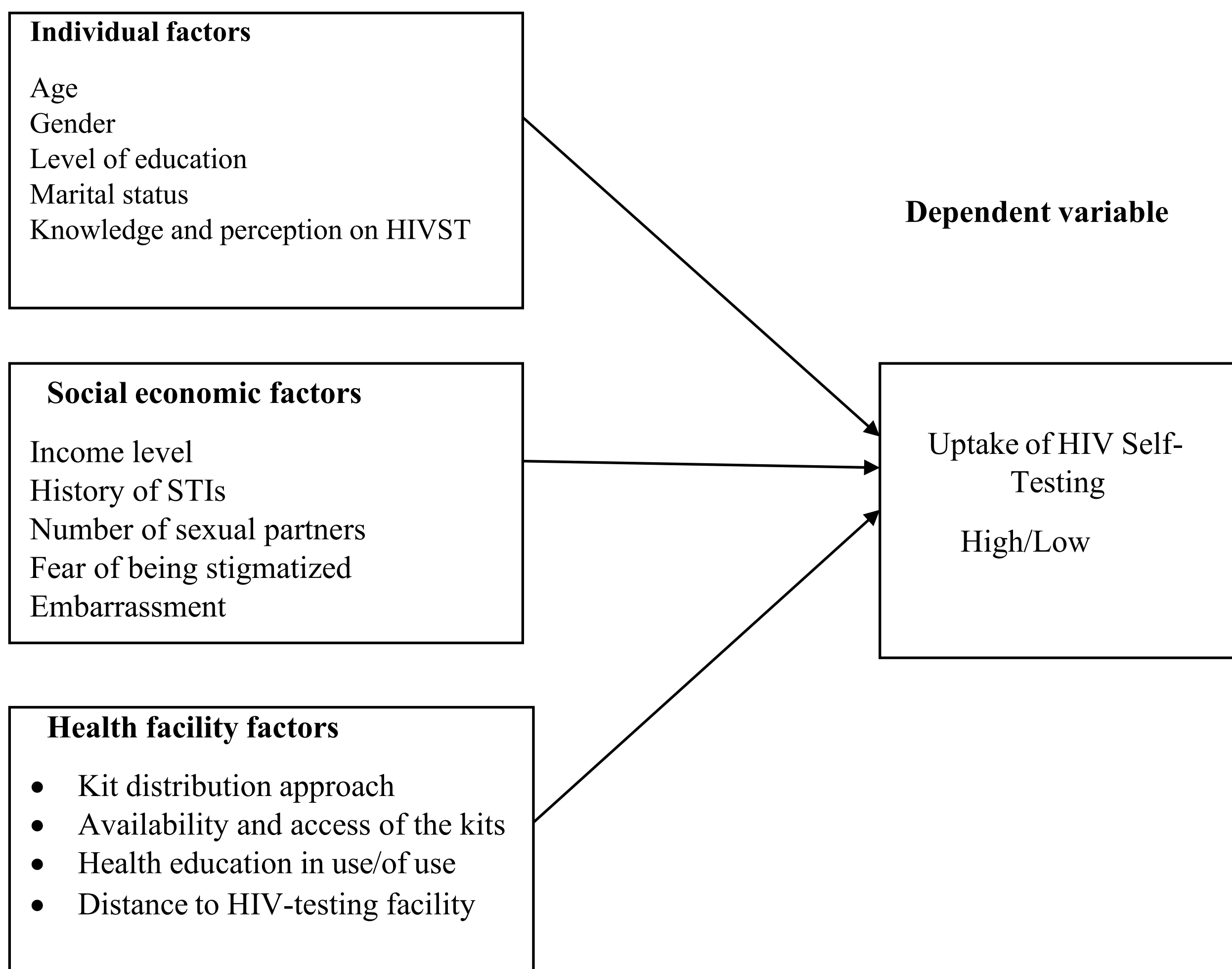
1. To determine the level of uptake of HIV self-testing among young people aged (15-24years) in selected health facilities in Mukono Municipality.
2. To establish the factors influencing HIV self-testing among young people aged (15-24years) in selected health facilities in Mukono Municipality.

1.4 Research questions

1. What is the level of uptake of HIV self-testing among young people aged (15-24years) in selected health facilities in Mukono Municipality?
2. What are the factors influencing HIV self-testing among young people aged (15-24years) in selected health facilities in Mukono Municipality?

1.5 Conceptual framework

Figure 1: **Conceptual frame work of the study**



Narrative of the Conceptual Framework.

The conceptual framework employed in this study explains the interplay between various independent variables and the uptake of HIV self-testing (HIVST) as the dependent variable. The independent variables are categorized into three primary domains: individual, socio-economic, and health facility factors. Individual factors encompass age, gender, educational

attainment, fear of stigmatization, and knowledge about HIVST. Socio-economic factors include marital status, income level, history of STIs, and the number of sexual partners. Health facility factors pertain to the approach of kit distribution, availability of test kits, provision of health education on HIVST usage, and the distance to HIV testing facilities. By integrating these variables into the conceptual framework, the study aims to provide a comprehensive understanding of the multifaceted determinants influencing HIVST uptake

1.6 Significance of the study

The findings of this study are anticipated to significantly influence policy development at both the district and hospital leadership levels within Mukono Municipality. By addressing the unique challenges faced by young people, particularly those in high-incidence areas, the study aims to inform the creation of targeted preventive strategies and programs. These initiatives are expected to enhance access to HIV testing services, promote the utilization of HIV-related healthcare, and contribute to the formulation of policies that better supervise HIV service delivery. Furthermore, the study emphasizes the importance of removing barriers to young people's participation in HIV-related processes and decision-making spaces, thereby fostering their meaningful engagement and leadership to ensure the sustainability of youth-led responses.

Young people aged 15 to 24 years represent a significant proportion of new HIV infections, underscoring the urgency of tailored interventions. According to the Uganda AIDS Commission, young women in this age group are particularly affected, with approximately 570 new infections occurring weekly. This demographic is often underserved in terms of HIV testing, knowledge of HIV status, and access to treatment and preventive measures. The study's findings aim to bridge these gaps by providing data-driven insights that can inform the development of culturally sensitive and effective intervention programs. By understanding the socio-cultural factors associated with non-testing among young people, including the potential of HIV self-testing (HIVST), the study seeks to enhance the reach and efficacy of HIV prevention efforts.

From a theoretical perspective, the study contributes to the existing body of knowledge on HIV and young people, offering insights into the sociological and anthropological aspects of non-testing behaviors. Practically, the quantitative data collected will serve as a valuable resource for health planners in Mukono Municipal, aiding in the design of more effective and culturally appropriate intervention programs. The findings are also expected to assist in the

development of protocols for the rational use of HIVST among young people, addressing challenges associated with provider-dependent HIV rapid testing. By facilitating the adoption of HIVST as an approach to HIV testing in Uganda, the study aims to reach populations that may otherwise face difficulties accessing traditional testing methods. Additionally, the study will serve as a reference for future research and academic endeavors, highlighting significant relationships that warrant further investigation.

1.7 Scope

1.7.1 Content scope

This study assessed to level of uptake of HIV self-testing among young people aged (15-24years) in Mukono Municipality. The independent variables of this study were factors influencing the uptake of HIV self-testing including individual factors, socio-economic factors and health facility, and the dependent variables are uptake of HIV self-testing.

1.7.2 Geographical scope.

The research was conducted at four different health institutions (Goma Health Centre III, Mukono Town Council HC IV, Mukono Church of Uganda HC IV, and Eseri Domiciliary Clinic).

1.7.3 Time Scope.

For this study, data collection was conducted over three weeks in the month of January 2025. The timeframe was selected to ensure sufficient data collection was done different youth clinics targeting youth at the facilities.

1.8 Justification of the study

The HIV prevalence in Mukono district is 7.4%, with young individuals (15-19 years at 1.1% and 20-24 years at 3.3%) being the most affected. Despite not widely studied, the high HIV load among people aged 15 to 24 is connected with existing impediments to sexual education, a lack of understanding about HIV prevention methods, and misconceptions (The Uganda HIV and AIDS Country Progress Report; 2020)

According to the District Health Information System (DHIS2) report from 2021, the above-mentioned facilities are the primary HIV service providers for people aged 15-24 years. Young people form the largest portion of the population of the community and its worth noting that new infections have continued to increase among this group. This study aims to explore the factors influencing the uptake of HIV self-testing among young people aged (10 -

24years) in Mukono Municipality. These findings will be used to provide insight into the improvement of policy framework and institutionalization of self-testing for HIV.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter provides a comprehensive review of existing literature pertinent to the study's objectives, focusing on the uptake of HIV self-testing (HIVST) among young people and the factors influencing its utilization. The literature was sourced from peer-reviewed journals, dissertations, and reputable online databases such as PubMed, Google Scholar, CINAHL, the Centers for Disease Control and Prevention (CDC), and the World Health Organization (WHO). The literature is presented according to the specific objectives; level of the uptake of HIV Self-testing among young people and factors influencing HIV self-testing among young people

2.1 Uptake of HIV-Self Testing

According to WHO (2020) estimates, 36.7 million individuals worldwide are now living with HIV (WHO, 2021). In Uganda HIV prevalence among young people (15 years and older) ranged from 0.2% among older teenage boys aged 15–19 years to 11.1% while HIV prevalence among older adolescent girls aged 15–19 years stands at 1.7%. HIV prevalence grew significantly during early adulthood, particularly among women between the ages of 15-19 and 30-34, and to a lesser amount among men between the ages of 15-19 and 35-39 (UPHIA, 2020).

Numerous Sub-Saharan African countries have recently expanded their HIV testing guidelines to include HIVST and are working to scale HIVST services nationally (HIVST.org, 2022; WHO, 2022). Previous studies have shown that peer-delivered HIVST increases recent and repeat testing among young people in high HIV prevalence settings (Figueroa et al., 2022; Ortblad et al., 2021). For instance, HIV self-testing randomized controlled trials among young people in Uganda and Zambia found that HIV self-testing achieved near-universal HIV testing coverage and substituted for facility-based testing.

In Uganda, although the HIV epidemic is considered generally stable for past 7 years (MoH Uganda, 2022), HIV is one of leading causes of death following neonatal disorders and diarrheal diseases in the country (CDC, 2021). Despite the improving trends, Uganda is still among the countries in sub - Saharan Africa categorized as high “burden” in respect to HIV prevalence. The prevalence among the adult population (15years-64 years) stands at 6.2%, and is reported to be higher among women (7.6%) than men (4.7%). The prevalence among children (0-14 years) has considerably dropped in recent years from 2% to 0.5%, an

achievement attributed to eMTCT efforts (MoH, 2021). Most of the new infections occur in young people (MoH, 2020b). One of the safe, accurate and effective strategies to reach young people recommended by the World Health Organisation (WHO) in 2020 is HIV self-testing.

HIV self-testing (HIVST), entails a person collecting their own oral-fluid and interpreting their own test results, happens to be the newest approach that also allows for testing at any time and place of an individual's choice (WHO, 2020). World over it is a promising new HIV testing strategy that has been proven to overcome barriers to facility-based testing and increase recent and frequent testing among diverse populations in different settings (Hatzold et al., 2022; Johnson et al., 2021). HIVST has had the potential to particularly benefit young people that are at an increased risk of HIV infection and have additional barriers to accessing traditional health services, including young people (Baral et al., 2022; Chanda, et al., 2021; Shannon et al., 2022).

Previous studies have shown that peer-delivered HIVST increases recent and repeat testing among young people in high HIV prevalence settings (Ortblad, et al., 2021; Figueroa et al., 2022). Despite the above, recent studies suggest that young people might have difficulties interpreting HIV self-test results and there remains uncertainty around "unintentional ways" young people use HIV self-tests (Ortblad, et al., 2023; Musoke, et al., 2023).

In Uganda, according to Ministry of Health (MoH) Uganda Population HIV/AIDS indicator survey (MoH, 2021), 72.5% of people living with HIV (PLHV) know their status. The most recent Uganda Population HIV Indicator Survey (UPHIA 2022) results indicate that 66.2% of adults living with HIV reported awareness of their HIV status: 68.6% of HIV positive women and 62.0% of HIV-positive men. These statistics show that Uganda is still far from realizing the global UNAIDS target of the first 95% (UNAIDS, 2022a; WHO, 2020).

The 2023 Uganda National HIV Testing Services (HTS) Policy Addendum formally recognizes HIV self-testing (HIVST) as a supplementary approach to traditional HIV testing methods. This policy shift aligns with global recommendations, such as those from the World Health Organization, which advocates for the expansion of HIVST to enhance testing coverage, particularly among populations with limited access to conventional testing services. The benefits of HIV testing such as initiation of HIV care and prevention behaviors, can only rely on correct interpretation of self-test results in which case, in traditional HIV testing and counseling, HIV test results are interpreted by a trained health care professional (Jamil et al, 2021). However, other studies Uganda suggest that young people might have difficulties

interpreting HIV self-test results and there remains uncertainty around unintended ways young people may use HIV self-tests (Musoke, et al., 2023). This is because young people are required to test for HIV regularly since they are at high risk of HIV acquisition.

Regular HIV testing among young individuals is pivotal for the early detection of HIV infection, facilitating timely initiation of antiretroviral therapy (ART) and achieving optimal viral suppression. This approach aligns with the "Undetectable = Untransmittable" (U=U) principle, which posits that individuals with an undetectable viral load effectively eliminate the risk of sexual transmission of HIV (CDC, 2023). Recognizing the need to enhance testing accessibility, the World Health Organization (WHO) recommended HIV self-testing (HIVST) in 2020 as a safe, accurate, and effective method to reach populations less likely to engage with conventional testing services, including young people. HIVST involves individuals collecting their own specimens either oral fluid or blood performing the test, and interpreting the results in private settings, thereby addressing concerns related to confidentiality and stigma (CDC, 2023). While instances of misuse and social harm associated with HIVST are infrequent, WHO emphasizes the importance of implementing measures to prevent, monitor, and mitigate potential risks (WHO/UNAIDs, 2020). The convenience and confidentiality of HIVST make it a valuable tool in increasing testing uptake, especially among those hesitant to utilize traditional testing avenues. Studies have demonstrated that lay users can perform HIVST reliably, achieving accuracy comparable to that of trained healthcare professionals, with results available within 20 minutes (CDC, 2023). Although HIVST does not provide a definitive diagnosis, it serves as a critical step in encouraging individuals to seek confirmatory testing and subsequent care, thereby contributing to broader HIV prevention and treatment efforts (MacPherson et al., 2023).

In general, HIV self-testing appears to be an accepted approach to HIV testing for various population groups (Figueroa et al., 2022).

A study conducted in USA by Katz et al, (2022) to assess the acceptability of home-based HIVST, revealed that less than 20% in young people use HIV self-testing services. In another study on HIV self-testing among 144 participants including young people in Cambodia by Pal et al. (2020), all 144 participants expressed acceptability ofHIVST but only 23% used HIV self-testing services to know their HIV status. This finding may be generalizable given the qualitative design of study with no quantitative characteristic.

Another cross-sectional study was conducted to assess the utilization of HIV self-testing

services, andto explore the reasons for the non-utilization of HIV self-testing services among the young people in eastern Nepal showed that HIV self-testing services are utilized byless than a third (29%) of the young people among the Bhutanese young people (Khatoon et al., 2023). In another cross-sectional study design that was conducted among 588 participants to determinethe magnitude of HIV self-testing service utilization among young people in Brazil found that 5.6% of study participants were tested for HIV suing the HIV self-testing services (Desta et al., 2021).

In Africa, a study by Jimoh & Balogun, (2020) on factors hindering uptake of HIV self-testing servicesamong young people in Kwara state, Nigeria, reported that in many countries, there is only 6.0% of HIV self-testing services uptake. According to a study by Ogaji, Oyeyemi & Ibrahim (2023) on awareness, willingness and use of HIV self-testing services by young people, It was found that 43% used HIV self- testing services in 2022 according to the HIV/AIDS and Reproductive Health Survey (NARHS) reportamong HIV self-testing services. The study however, reported low uptake of HIV self-testing servicesof 14.4% and 14.7% of females and males respectively in the general population. Another study by Jimoh & Balogun, (2020) reported that the level of HIV self-testing services uptake in Nigeria remains low among most Nigerians vulnerable young people.

Another study by Lyons et al., (2022) to assess the use of HIV Self-Testing among First-Time Testers at Risk for HIV in Senegal reported that 46.9% were first-time testers and 26.2% had tested within thelast year; 94.3% reported using the HIVST, and 2.9% reported a reactive result which was associated with first-time testers ($p = 0.024$). Implementation indicators suggested the importance of leveraging existing community structures and programs for distribution.

A cross-sectional study conducted in Kenya among 240 pre-exposure prophylaxis (PrEP) users revealed that 14% utilized HIV self-testing (HIVST) kits. However, the study also identified a significant proportion of invalid test results, exceeding 15%, indicating the necessity for enhanced user education and support to ensure accurate self-administration and interpretation of HIVST (Ngure et al., 2021). While this study primarily involved Sero discordant couples, a demographic that constitutes approximately 2% of PrEP users in Uganda, its findings are pertinent to the Ugandan context. In Uganda, the majority of PrEP users are young individuals at elevated risk of HIV exposure. Given the advantages of HIVST, such as ease of use, privacy, and time efficiency, it presents a promising strategy to increase HIV testing uptake among this demographic. Implementing HIVST could address barriers associated with conventional testing methods and enhance the effectiveness of HIV

prevention efforts among young people in Uganda. On the contrary, a cross-sectional design to assess the factors associated with non-utilization of HIV self-testing services in Uganda showed that non-utilization of HIV self-testing was 14% (Shewade et al., 2021).
However, there are many factors that influence utilization of HIVST among young people. These are discussed under three specific subthemes namely: individual factors, socio-economic factorsand health facility factors.

2.2 Individual factors influencing uptake of HIV-Self testing among the young people

Fortenberry et al., (2022), in their face-to-face interviews of 847 men and 1126 women from clinic locations in seven U.S. cities, found among that age, was independently associated with HIV self- testing in the past one year. Another study of predictors of HIV testing, conducted among 117 gay, lesbian, and bisexual youth in the US in 2020, found that young age was positively and significantly related to HIV self-testing among the study population (Maguen, Armistead, & Kalichanan, 2020). In another cross-sectional study conducted to assess prevalence and associated factors of HIV self-testing among homosexual men from April to October 2022 in Ningbo, China found that odds of older age 30–39 years (AOR = 0.49, CI 0.32–0.76) were more than 40 years (AOR = 0.07, CI 0.04–0.14)
compared to 18–29 years) (Hong et al., 2021).
Similarly, a study conducted by Kaai et al., (2022) on factors that affect HIV testing and counseling services among heterosexuals' African young people in Canada and the United Kingdom found age to be the most frequently mentioned individual factor associated with HIVST. This was more likely if the participants were younger than 40 years, while other three studies found that respondents who were younger than 25 years or 30 years were less likely to have HIVST. In both circumstances the results were reported to suggest that the highest testing rates were among the middle-aged study participants and lower among the young and older populations.
Similarly, Yahaya, Jimah & Balogun (2020) conducted a quantitative study on factors hindering HIVST in Kwara State in Nigeria comprising of 600 participants with 390 males and 210 females. The findings show that participants aged over 35 years had a positive association with HIVST practices. In another a cross-sectional survey involving quantitative research methods conducted by Sanga et al., (2022) to evaluate the factors influencing the uptake of HIVST in Arusha City, Tanzania adopted, it was found that age range from 13 to 24 years had lower use of HIVST compared to their older counterparts.
A cross-sectional study in the UK found other factors such as being a female influenced the

heterosexuals in getting tested for HIV. They found three studies that cited marital status as a factor associated with HTC (Kaai et al., 2022).

Furthermore, Olusola et al, (2022), who conducted a quantitative study with 287 participants in Shagamus Metropolis of Ogun state, Nigeria, to assess HIVST utilization found that participants' gender had significant positive relationship with HIVST utilization.

Other studies conducted across Africa have reported varied HIV self-testing uptake by young people related to gender such as Yawson et al., (2022) who reported that females in Southern African countries were utilizing HIV self-testing than males compared to countries such as Ethiopia, Nigeria, Tanzania, and Zambia where male utilization of HIV self-testing was higher than females. They found the high female testing to be consistent with previous findings in Ghana, which shows high readiness for HIV testing among pregnant women in Ghana (Yawson et al., 2022).

Asante (2023) in SA also reported that though most people are aware of HIV infection only 28.3% of females and 34.2% of males aged were able to accurately distinguish between information andcommon misconception.

A cross-sectional study conducted to assess prevalence and associated factors of HIV self-testing among men who have sex with men (MSM) from April to October in Ningbo, China in 2022 found that HIVST was highest among MSM who were having higher education level (high school AOR = 2.82, CI 1.70–4.69), compared to middle school or less (Hong, et al, 2021). In a related study done by Mtengo et al., (2022) indicated in a cross-sectional analytical study revealed education was also found to be significantly associated with HIVST utilization. Thus, respondents withhigher education or secondary school education were more likely to use HIVST services than those with primary or no education.

In Africa, Yahaya, Jimah & Balogun (2020) conducted a quantitative study on factors hindering HIVST in Kwara State. A total of 600 participants comprising 390 males and 210 females of the state took part in the study. The study concluded that more educated individuals use HIVST services more than the less educated individuals. Another study conducted to examine the association between HIVST and education level amongst South African women found that women with tertiary education were 3.93 times more likely to have HIVST (Ekholuenetale, Nzoputam, & Okonji, 2022).

According to Kalanzi (2023) indicated that 63% of participants with some college education had HIVST compared to 47% of those with a high school education having tested for HIV in Uganda. Meanwhile, a mixed methods cross-sectional study at Pre-Exposure Prophylaxis clinics at MARPI Mulago and Kasensero HC II to study uptake of oral based HIV self-

testing revealed that predictors of uptake of HIV self-testing was education level; high among those with post primary education (Matovu et al, 2020).
According to Strauss, Rhodes, & George, (2023) in study done in SA, at the level of the individual, one fundamental finding that influences uptake of HVST is the knowledge about HIV and testing. Limited knowledge about HIV self-testing (HIVST) has been identified as a significant barrier to its utilization among young individuals. Studies indicate that individuals who perceive themselves at higher risk due to behaviors such as unprotected sex are more inclined to adopt HIVST, whereas those who have never engaged in sexual activity and believe they are not at risk are less likely to do so. Furthermore, a history of frequent HIV testing and regular visits to health facilities among young people are predictors of continued engagement with HIV testing services. Kalichman, Eaton, and Cherry (2021) conducted a randomized controlled trial (RCT) which found that while fact-based education about HIV transmission is necessary, it is not sufficient alone to promote HIVST. Their study revealed that individuals with knowledge about HIV were 3.69 times more likely to utilize HIVST services compared to those without such knowledge. A Sub-Saharan African survey conducted between 2020 and 2022 reported that only 10% of males and 15% of females among young people knew their HIV status through HIVST, suggesting that a lack of knowledge on how to use the kits contributes to low awareness of HIV status (WHO,2022). In Gaborone, Botswana, a study examining the use of oral HIVST among young people identified barriers including lack of knowledge about the HIVST kit, fear of testing due to anticipated stigma, mistrust of the test's accuracy, and doubts about self-competency to perform HIVST. Similarly, Mohlabane et al., (2020) found that HIV-related stigma and lack of motivation significantly hinder the uptake of HIV testing services in South African health facilities, indicating that stigma can adversely affect access to HIVST.
Sources
Indeed, some authors (Walensky & Bassett, 2021) have indicated that HIVST testing approaches which offer privacy and thus minimize stigma are more likely to be acceptable than those which do not.
According to Kaai et al., (2022) "Stigma and discrimination have taken their toll in Ethiopia not only at the workplace, in housing, health facilities, schools, and family and personal relations but also in medical services, discouraging people from taking HIVST as they believed that once positive, they will still need to open up to the health workers. Moreover, in an exploratory study employing in-depthinterviews (IDI) and participatory group discussions (PGD) with young people in Kenya participants also expressed concern that HIVST could

cause personal harm, including severe distress and self-harm for the young people with reactive test as this was related stigma and discrimination and to the lack of professional counselling support in the self-testing environment (Soori et al, 2022).

The reviewed literature indicates that while multiple factors influence the uptake of HIV self-testing (HIVST), it remains a viable strategy for enhancing HIV testing rates in rural communities. However, stigma emerges as a significant barrier, adversely affecting health-seeking behaviors. Individuals often delay seeking care or refrain from disclosing their health status due to fears of isolation or rejection, which can lead to non-adherence to medical advice. Such anticipated stigma has been shown to hinder engagement with HIV care services, as individuals may avoid clinics to prevent being seen and potentially identified as HIV-positive. This avoidance behavior underscores the need for interventions that address stigma to improve the effectiveness of HIVST initiatives in rural setting

2.3 Social-economic factors influencing HIV-Self testing among the young people

A cross-sectional research design to examine factors associated with never having tested for HIV among 4,168 participants in the US found that self-HIV testing was associated with being married compared to being unmarried (Jude et al, 2021).

Research conducted by Addis et al., (2023) in Northwest Ethiopia identified a significant association between marital status and the uptake of HIV self-testing (HIVST) among young individuals. The study revealed that a higher proportion of single participants (59%) had utilized HIVST compared to those in relationships (25%) and married individuals (16%). Furthermore, the intention to use HIVST in the future was more prevalent among never-married students (66%) than among those in relationships (27%) or married students (7%). These findings suggest that unmarried individuals are more inclined to engage in HIV self-testing compared to their married or cohabiting counterparts. Furthermore, Olusola et al, (2022), who conducted a quantitative study with 287 participants in Shagamus Metropolis of Ogun state, Nigeria, to assess HIVST utilization found that participants' gender had significant relationship with HIVST utilization. In Uganda, a cross-sectional study that was carried out at Nabweru HC III and Entebbe Hospital in central Uganda, found that single participants, separated or divorced and particularly female were less likely to be linked to HIVST (Bbuye et al., 2022). A study in the UK found having low income to have influenced the heterosexuals in getting tested for HIV (Kaai et al., 2022). In a related study by Mtengo et.al., (2022) indicated in a cross- sectional analytical study revealed income was also found to be significantly associated with HIVST utilization. Thus, participants with higher income

were more likely to use HIVST services than those with low-income status. Similarly, another study conducted to examine the association between socio-economic factors and HIVST amongst South African women found that richer and richest women who have good knowledge of HIV infection were 1.88 and 2.24 times more likely to have HIVST, respectively, when compared with those from the poorest wealth household had more HIVST uptake (Ekholuenetale, Nzoputam, & Okonji, 2022). Meanwhile, Addis et al., (2023) in Ethiopia found that low-income level was associatedwith low HIVST. This was because they might not be able to purchase the kits from the nearby clinic unlike those who were able to afford the kit (Addis et al., 2023). Poverty was also found to be a big barrier for seeking health care including HIVST services in a study conducted by Bwambale et al, (2023) in rural western Uganda.

According to Tanser et al., (2022) study young peoples' slow progression through the HIVST in South Asia can be attributed to feeling of confidence by the fact that they have never suffered from STIs in the recent months. Preliminary findings from a large multi-country testing and counseling (MCTC) program in Botswana revealed that the uptake of HIV self-testing (HIVST) was relatively low during its first eight months of implementation. This was said to be due to not feeling at risk since they believed that if one is diagnosed with Sexually Transmitted Disease, it means that they have the high chance of having HIV (Mazhani et al., 2000). In addition, a study where Kalibala et al., (2021) assessed knowledge, attitudes and practice towards voluntary HIVST among internally young people in Ethiopia, they found that the main reason for persons who had never had HIVST in the past was not having experience any STDS.

Furthermore, a study conducted in Uganda showed that interest in HIVST is often "social", with clients showing interest in knowing their sero status before getting suffering previously with STDs (UNAIDS,2022).

Kaai et al., (2022) studied on factors that affect HIVST among heterosexuals in Canada and the United Kingdom,

A study categorized factors influencing HIV self-testing (HIVST) into six broad categories namely; risk perception, illness or having HIV symptoms, fear of HIV-related stigma and other fears, level of HIVST education, and mandatory or partner-recommended HIVST. Notably, having multiple sexual partners emerged as the strongest predictor of HIVST uptake compared to having a single sexual partner. Similarly, Yahaya et al., (2020) found that among youths in Kwara State, Nigeria, those with multiple sexual partners were significantly more likely to engage in HIVST. These findings align with other research indicating that

individuals with multiple sexual partners often perceive themselves at higher risk for HIV, thereby increasing their likelihood to undergo testing. For instance, a study among female university students in Uganda revealed that having one or more sexual partners was significantly associated with a higher willingness to use HIVST. However, it's important to note that while multiple partnerships can heighten risk perception and testing, other factors like stigma, fear of a positive result, and lack of education can deter individuals from testing. A qualitative study in Zambia and Kenya found that adolescents often avoided HIV testing due to fears of stigma and the implications of a positive diagnosis

In a related study done by Mtengo et al., (2022) in Tanzania indicated in a cross-sectional analytical study revealed number of sexual partners was also found to be significantly associated with HIVST utilization.

2.4 Health facility related factors influencing HIV-Self testing among the young people

Barriers to HIV self-testing that include access of the kit at the facility of pharmacies and other distribution means as well as the Kit distribution approach can affect HIVST. According to UNAIDS (2020), the number of ways HIVST testing kits are distributed has significantly increased the use of HIVST among the population. Across sub–Saharan Africa, it is estimated that HIVST testing increased magnificently with increase in the number of distribution methods used. (UNAIDS, 2021).

Geng et al., (2021) studied the direct provision versus facility collection models of HIV self-tests among young people in Uganda. A randomized controlled trial conducted in Kampala, Uganda, evaluated the effectiveness of peer-delivered HIV self-testing (HIVST) and pre-exposure prophylaxis (PrEP) among adolescent girls and young women (AGYW). The study found that distributing HIVST kits through peers was more successful than facility-based collection, primarily due to the enhanced privacy it offered, which is crucial for young individuals who may face societal stigma. Given its recent implementation and randomized design within the Ugandan context, the study's findings are considered reliable and applicable. However, the research focused solely on one aspect of HIVST among youth, indicating the necessity for more comprehensive studies to fully understand and address the multifaceted needs of this population.

Gadegbeku & Saka (2023) in their study of the young people in Accra regarding HIVST, reportedthat even though HIVST services have numerous advantages, the kits are unavailable even when one wants to buy them. A recent evaluation in Uganda revealed that while a significant majority (95%) of respondents were aware that their HIV status could be

determined through testing, only 37% had heard about the availability of HIV self-testing (HIVST) services. Among those aware, only 6% had actually purchased and used HIVST kits. This indicates a low level of both awareness and utilization of HIVST services within the studied population. Such findings highlight the need for enhanced awareness campaigns and more accessible distribution methods to improve the uptake of HIVST in Uganda.

The cross-sectional study by Strauss et al., (2022) in Kenya also revealed that the offer of HIVST without charge, the performance of HIVST service, greatly facilitates HIVST among young people.

According to Kalichman, Eaton, & Cherry, (2021), it was found that vigorous community health education programs on HIVST as one of the ways to test was very essential for effective promotion ofHIVST. The study further explained that receiving health education on HIV testing methods increasedthe use of HIVST like any other methods.

A study done in Ethiopia to assess HIVST uptake testing using the health belief model revealed that respondents who had received health education on HIV including HIVST had more chance of using the methods in HIV testing unlike those who had no education would rather do the tradition HCT (Abiy et al., 2022). Moreover, a study conducted among mine workers in South Africa showed that lack of health education on the procedures involved in self-testing fear of testing is one of the main barriers touse of HIVST among the population (Magnus & Gbakeji, 2022).

The difference in HIVST utilization between urban and rural areas was purportedly attributed to the perceived differences in access to health care facilities where HIVST and HIV/AIDS-related information are provided (Leta, Sandøy, & Fylkesnes, 2021). A related study conducted in 2020 in South Africa was cited to have found that having access to testing facility was associated with use of HIVST services more. The authors reported in their study that in rural areas with smaller communities and less anonymity there may be fear about compromised confidentiality, which will eventually increase stigmatization from a positive test. Mobilizing community members to advocate about HIV testing through outreach and education programs was identified as a potential factor in the success of HIVST in three studies with key stakeholders working in sexual health and HIV (Burns et al, 2021; Elam et al, 2022) and one study with African men and women considered to be at risk of HIV infection (Burns 2022).

Elsewhere in Ghana, a study by Asante, (2023) found that although over 90% of the participants had knowledge about where to get an HIVST test, the resistance of participants to access and use HIVST was attributed to distance to access the kits for use. Another study

also found out that residing or livingin a city influenced the heterosexuals in utilizing HIVST (Kaai et al., 2022).

Another study carried out by (Matoro et al., 2021) in Uganda found that health-seeking behavior of youth with regard to HIVST was low mainly because of different kinds of distance to the health facilityfor the kits.

2.5 Conclusion

The literature review presents a discussion of the achievements in combating HIV pandemic globally and highlights concerns and gaps related to HIVST. The HIV policymakers and implementers have expressed concerns regarding HIVST at the individual level, HIV self–tests reliability and linkage to HIV prevention, treatment and care. One of the key concerns at the individual level is the possibility of coercion to self-test particularly among couples, which can be compounded with potential psychological harm because of the lack of post-test counselling (Carballo-Dieguez et al., 2022, Katz et al., 2022). Besides, older individuals compared to their younger counterparts may not perceive themselves at risk and therefore may not undertake self–testing. Finally, there is a concern that self–testing may encourage unprotected sexual intercourse when people know their HIV status. In terms of the self- test, the concern is the window period – the time between suspicion of HIV infection and detection of HIV antibodies by the assay (Holm-Hansen et al., 2007). In fact, most rapid diagnostic tests have a 6 to 12 weeks window period (HolmHansen et al., 2007). The current cost of HIV self–test kits range from $0.50 to $50 and may be a drawback to the uptake of HIVST (UNAIDS 2023, UNAIDS 2023). Another concern related to the HIVST is suspicion of adherence to the self–testing protocol. There is also concern on how to design instructions that are easy to understand and follow. An additional concern raised is the linkage to the HIV prevention and care services post-testing after HIVST (Choko et al., 2021, Mavedzenge et al., 2021). Despite all these concerns, which are valid and call for more research, currently, there is no strong evidence to show that self–testing has increased social harms or adverse effects compared with other testing modes (US Food and Drug Administration, 2022).

Innovative interventions to attract KVPs to undertake HIV testing, such as HIVST, have shown the potential to circumvent facility-based barriers to HIV testing. Facility-based barriers to HIV testing include fear of visibility, long-queues and long waiting time (UNAIDS 2022). Despite existing evidence on the potential of HIVST however, there are still gaps in the literature in LMICs about HIVST uptake and linkages to HIV prevention, care and treatment. Lastly, there is a need to understand how the consequences may vary in

different settings, the proportion of people with a positive HIVST result who receive confirmatory testing, or who are diagnosed with HIV positive results and the link to treatment and care and the HIV negative people who are linked to prevention services (Johnson et al., 2022).

CHAPTER THREE: RESEARCH METHODS

3.0 Introduction

This chapter consists of the methods that were used in the research study such as research design, study area, study population, sample size, sampling technique and eligibility criteria. The methodology also covered variables, sources of data, data collection instruments and tools, data collection techniques, plan for data analysis, quality control issues, ethical consideration, and finally plan for dissemination of study findings.

3.1 Study design

The study employed a mixed cross-sectional study design. Quantitative data collection method was applied. Interviews were conducted using a structured questionnaire for collecting data from respondents. In a cross-sectional study, the investigator measures the outcome and the exposures in the study participants at the same time (Gravetter, & Forzano, 2022). This rationale for choosing the study design was because the method had an advantage of being quick and cheap to conduct since data is collected once and multiple outcomes can be studied therefore requiring fewer resources to conduct the whole study. A cross-sectional study is also the best choice if the researcher only has the time or money to collect cross-sectional data or plans to gather data at a single point in time.

3.2 Study area

The study was conducted in 2 health centers of Kasawo Health centre III and Seeta Nazigo Health Centre III all located in Mukono Municipality which is approximately 20kilometers East of Kampala (the Capital City of Uganda) and is situated along the highway which links Uganda to its Eastern neighbor Kenya. It’s surrounded by Kira Town Council, Nama and Nakisunga Sub- counties and it has a shoreline along Lake Victoria. Mukono Municipality is made up of 2 Divisions, 9 Wards and 79 Villages.

3.2 Sources of Data

Primary data was collected on uptake and factors influencing HIVST from the young people aged 15-24 years in Mukono Municipality from Health workers and secondary data was collected from the register books showing the recent HIVST utilization care to compare with

the data collected from primary sources as well as literature review sources like the journal, articles, district and hospital data.

3.3 Study Population

This comprised of the young people aged 15-24 years in Mukono Municipality, who were available during the data collection interaction from January 2024-March 2024.

3.4 Eligibility Criteria

3.4.1 Inclusion criteria

All young people aged 15-24 years in Mukono Municipality who were available and had lived in the area for at least three months prior to data collection period. Those who were willing to participate were included in the study and those below 15years were not included. During the data collection, none of the potential respondents was excluded for any reason.

3.5 Sample size Calculation

The formula by Kirkwood and Sterne (2003) was chosen because it is widely recognized and specifically designed for calculating sample sizes in cross-sectional studies, which are commonly used in research that assesses prevalence or other population characteristics at a specific point in time. This formula takes into account the desired confidence level, the expected proportion of the population with a characteristic, and the acceptable margin of error, ensuring that the sample size is statistically robust and representative of the population being studied.

$n = z^2 \times p\ (1-p)$

d^2

n=required sample size

z= confidence level at 95% (standard value of 1.96)

p =proposed percentage of acceptability of HIVST showed at 87% acceptability (Nangendo et al., 2021).

d = margin of error at 5% (standard value of 0.05).

$n = 1.96^2 x 0.87\ (1-0.87) = 173.79$

0.05^2

Therefore, the sample size of respondents was 174 participants. An additional 10% of this number was included in that study to cater for lost to interview participants yielding 191 participants.

Therefore, the sample size was 191

3.6 Sampling procedures

The study employed systematic random sampling to select the two health facilities in Mukono Municipality. The selection process involved randomly choosing two health centers from the pool of available facilities, ensuring that the chosen health centers were representative of the population. These facilities were specifically chosen based on their catchment areas and their role as pilot sites for HIV self-testing (HIVST) by the Ministry of Health, ensuring they were relevant to the research context.

For participant selection, the study used systematic random sampling. After predetermining the average monthly attendance of adolescents at each of the selected health centers, a sampling interval of 4 was obtained by dividing the total population and the sample size (803/191). With a total sample size of 191 participants, this approach ensured that every 4th adolescent attending the health center was selected for participation in the study, providing a structured and unbiased way to gather data from a broad cross-section of the adolescent population attending the facilities.

3.7 Study variables

The variables that this study used in the assessment of factors influencing HIVST among the young people aged 15-24 years in Mukono Municipality; in terms of the categories that each of the variables (independent and dependent) was made of the type of analysis that each was subjected to and the scale of measurement that each of them were set with, during analysis. It is shown that the three independent variables were each analyzed descriptively and inferentially, using the regression model.

Table 1: Measurement of variables

Variable	Category	Data analysis for each variable	Scale of measurement of each variable during analysis
Individual factors			
	Age	Descriptive, and inferential	Scale
	Level of education	Descriptive, and inferential	Ordinal
	Gender	Descriptive, and inferential	Nominal

	Knowledge on HIVST	Descriptive, and inferential	Nominal
	Marital status	Descriptive, and inferential	Scale
Social economic factors			
	Income level	Descriptive, and inferential	Nominal
	History of STIs	Descriptive, and inferential	Nominal
	Number of sexual partners	Descriptive, and inferential	Scale
	Fear of being stigmatized	Descriptive, and inferential	Nominal
Health system factors			
	Kit distribution approach	Descriptive, and inferential	Nominal
	Availability	Descriptive, and inferential	Nominal
	Health education of use	Descriptive, and inferential	Nominal
	Distance to HIV Testing facility	Descriptive, and inferential	Scale
Dependent variable			
	Uptake of HIV Self-Testing		
	Use HIV Self-Testing	Descriptive only	Nominal

3.8 Data Collection techniques

The study used researchers administered structured interviews to collect data from the young people in Mukono Municipality. A structured questionnaire was administered to respondents by a research assistant to collect data regarding factors influencing uptake of HIVST among the young people. The structured interview given involved asking a respondent a question, supplemented with multiple choice questions from which they can choose the most appropriate in the study context. It can thus be said that with a structured interview, it was possible to obtain data that was used to answer all the four analytical type objectives that the study has. That is one of the reasons why it was chosen as the most suitable data collection method, in addition to the fact that it is fatigues respondents relatively less as compared to other data collection methods given its structured feature.

The questionnaire was written in English and a translation in Luganda was made available and applied during data collection process since all respondents understand Luganda language very well.

3.9 Data Collection tools

As with the choice of data collection method, the type of data that this study has to collect required that the responses obtained from the young people aged 15-24 years in Mukono Municipality are captured in a close ended format, that later made the responses quantifiable and measured in scale, nominal or ordinal formats during analysis. That implies that the data collected using structured questionnaires were able to answer all four research questions, making it a suitable tool for this study.

Additionally, structured questionnaires have a merit of being quicker to administer compared to semi structured or open-ended tools, in addition to having more comprehensible items for all categories of study populations. Its use thus ensures that all data collected with it is accurate and more valid. The tool was designed with four sections A (individual factors) B (Socio-Economic factors), C (Health system), D (uptake of HIVST).

Study Procedure

The researcher obtained an introductory letter from Uganda Management Institute (UMI), which was presented to Mukono Municipality authorities and subsequently to the management of the selected health facilities to seek permission to conduct the study. After approval, the researcher worked closely with health facility in-charges and staff to identify suitable points of contact for accessing young people aged 15–24 years who were the target population.

Following development of the data collection instruments, the tools were reviewed and approved by the academic supervisor before being pretested among a small group of young people outside the study sites. Pretesting was conducted using the same questionnaires intended for the main study to ensure clarity of questions, consistency of interpretation, and feasibility of administration. Feedback from the pretest informed refinement of the final instruments.

For the main study, trained research assistants, under the supervision of the researcher, collaborated with health facility staff to approach potential participants. The health workers helped to introduce the study to young people attending the facilities, after which the research

team provided a detailed explanation of the study objectives, procedures, risks, and benefits. Eligibility screening was performed by the research assistants based on the inclusion and exclusion criteria. Those meeting the eligibility criteria were invited to participate.
Informed consent was obtained from all eligible participants aged 18–24 years, while for participants aged 15–17 years, assent was obtained in addition to parental or guardian consent, in line with ethical guidelines. The research assistants then enrolled participants and administered the structured questionnaires.
All interviews were conducted within the health facility premises, in designated private spaces arranged with the support of facility management, to ensure confidentiality and minimize interruptions. Each interview lasted approximately 30–40 minutes. The researcher closely monitored the data collection process to ensure adherence to ethical and methodological standards.

3.10 Plan for data analysis

All completed questionnaires (n = 190) were checked daily in the field for completeness and consistency by the principal investigator and trained research assistants. After verification, data were double-entered into EpiData software by two independent data clerks to minimize entry errors. The two datasets were compared, and discrepancies were resolved by cross-checking with the original questionnaires. Data cleaning, including range checks and validation of missing values, was performed in EpiData before export. The final, cleaned dataset was exported into SPSS version 26 for statistical analysis. The principal investigator, with support from a biostatistician, conducted all data analysis.

Univariate analysis: Data on respondent's age, sex, and uptake of HIVST was tabulated and frequency tables, bar charts and pie charts generated to assess the statistical distribution followed by the study population. The prevalence of uptake of HIVST was determined by dividing the number of those who made use of HIVST services by the total number of participants interviewed and this was presented in a pie chart.

Bivariate analysis: Cross tabulations as a standard measure for association of the two categorical variables under measure was made between the uptake of HIVST and each of the respondent's independent variables. As a result of this comparison, the probability values (P)

generated from each of these cross tabulations determined the significance of the variables. All probability values p< **0.05** were considered significant from the cross tabulations and therefore considered as actual influencing factors for the uptake of HIVST.

Multivariate analysis: To control for potential confounding and to identify independent predictors of HIVST uptake, variables that were statistically significant at the bivariate level ($p < 0.05$) were included in a binary logistic regression model. In addition, variables considered theoretically important or identified in previous literature as potential confounders were also entered into the model, regardless of their bivariate significance. The strength of association was expressed as adjusted odds ratios (AOR) with 95% confidence intervals (CI). The variable with the highest regression coefficient was considered to have the greatest influence on HIVST uptake.

3.11 Quality Control Issues

In order to adhere to the principle of validity and reliability, a specific day was set for pre-testing the questionnaires was done at Kira Town and this involved a total of 10 young people aged 15-24 years in Mukono Municipality. The purpose of conducting this pretest was to ensure the highest degree to which the questionnaire is clearly understood by the respondents. This helped in identifying areas which call for modification and certainly corrections were undertaken, if need be, before the actual data collection commences. Pretesting also familiarizes the research assistants with the data collection tools.

The data was collected by the researcher assisted by the research assistants. Two categories of research assistants were recruited and trained in how to administer the questionnaire in order to minimize errors during data collection process. Strict supervision throughout the process of data collection was emphasized by the principal investigator to facilitate collection of quality data with minimal errors.

Considering consistency, all the filled questionnaires were rechecked on daily basis after data collection and pre-coding of the questionnaires containing closed ended questions were done. The data was then entered in epidata software and was then exported to SPSS version 26 where the data cleaning was effectively be conducted. For security reasons of the data, keeping data under key and lock was strictly observed in order to deny access to data by unauthorized people.

Validity of the data collection tool

Of the available forms of validity, content validity of the questionnaire was tested, as it could show the readiness of the questionnaire for data collection. Content validity of the tool was tested first, among other quality control measures because the next steps of quality control (training of assistants and pretesting) had to be done using a valid tool.

In measuring the validity of the tool, the content validity index was calculated, in a process that involved identifying four independent judges to rate the items in the questionnaire. Each of them was given the objectives of the study and a summary of the methods that were used in the study, so that their item ratings are done while in the know about the study. They were also requested to use a rating scale that was as follows; 4 for a very relevant item, 3 for a relevant item, 2 for a somewhat relevant item, and 1 for a non-relevant item. Each was independently given the questionnaire and requested to rate.

Therefore, the content validity index was calculated using the formula.

CVI = Number of items rated 3 or 4

Total number of items in 2

The tool was deemed valid if the CVI was found to 0.77 which is within the range of 0.7 to 0.9 (Cronbach, 1990), and at that point, it was used during the training of the research assistants

3.12 Ethical Issues

Approval: This study was conducted with due approval of Uganda Christian University Mukono Research Ethics committee after which the researcher obtained Ethical approval letter. Permission from Mukono Municipality respective divisions was obtained before collection of data.

Consent: an official letter that explains the objectives, rationale and expected outcomes of the study was written to the district authorities' office as well as health facilities from the University requesting cooperation. The principal investigator communicated to the health facilities management and obtained written consent from the office as well as from households on which the study was conducted.

3.13 Plan for dissemination of findings

The report was presented to Uganda Christian University Faculty of Public health, Nursing and midwifery for partial fulfillment of the requirement for a ward of a Master Public Health leadership of Uganda Christian University.

Copies of the report will be disseminated to district; all the divisions will be given a copy each.

The researcher organized a community feedback sessions/meeting to the respective villages to give them the finding from the study to the study participants and some other stakeholders.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.0 Introduction

This chapter contains the results from the study. The study determined the level and factors influencing the uptake of HIV self-testing among young people aged (15-24years) in Mukono Municipality to improve utilization of HIVST services among young people. The respondents were 191 residents in young people aged (15-24years) yielding response rate of 100%. The results are presented below in accordance with the study objectives.

4.1 Individual factors influencing HIVST among the participants

Table 2: Univariate analysis of individual factors influencing HIVST among the participants (n=191)

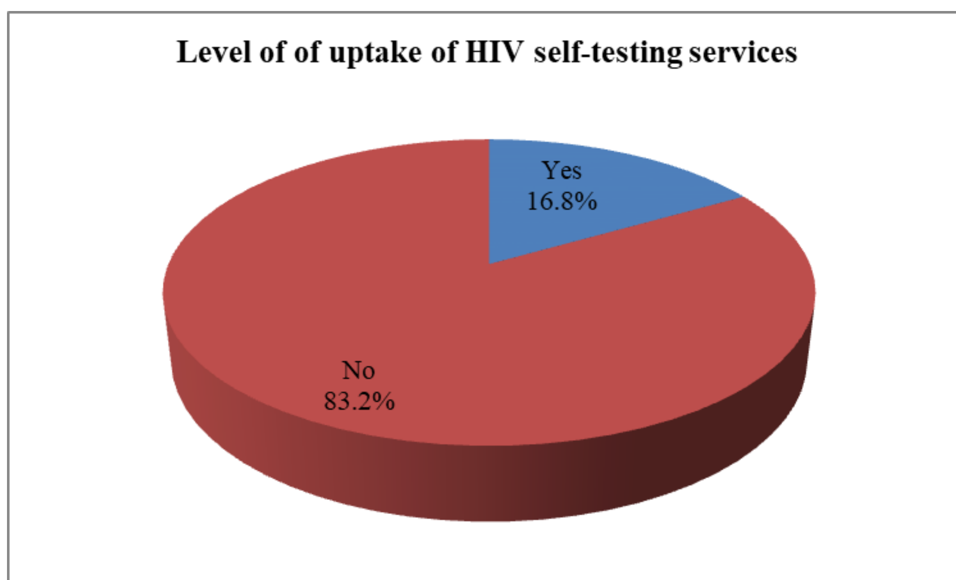
Variables	Frequency n	Percentage %
Respondents age in complete year		
15-17 years	26	13.6
18-20 years	42	22.0
21-23 years	85	44.5
23-24 years	38	19.9
Respondent's educational status		
Not gone to school	43	22.5
Primary	32	16.8
Secondary	57	29.8
Tertiary	59	30.9
Gender		
Female	84	44.0
Male	107	56.0
Ever heard about HIVself-testing		
Yes	54	28.3
No	137	71.7
Source of information		
Family member	15	27.8
Friend	19	35.2
Radio,	10	18.5
TV	10	18.5
Benefits HIV testing		
People who test positive can get treatment		50.3
Effective at preventing spread from thosewho are positive to	96	20.4
the negative.	39	14.7
It also enables positive living throughreferral to social	28	9.4
groups like (TASO) and peer support groups.	18	2.1
Increases community awareness aboutHIV	4	4.2
Reducing stigma among HIV/AIDSpeople	8	
Helps plan for future		

Know how to use the HIV self-testing in case you need to use it		
Yes	21	11.0
No	170	89.0
I felt embarrassed about going for HIV testing services including HIVST		
Yes	39	20.4
No	152	79.6
Ever been afraid of the HIVST results		
Yes	45	23.6
No	146	76.4
Be discriminated against in the community because of your HIV status		
Averagely	20	10.5
Not at all	171	89.5
Felt stigmatized/discriminated because of using HIV testing services		
Yes	34	17.8
No	157	82.2

The most participants 85 (44.5%) were aged 21-23 years, while 116 (60.7%),57 had attained tertiary education, 107 (56.0%), males had utilized the service and had never heard of HIV self-testing 137 (71.7%). Most individuals learned about HIV from friends (35.2%) and believed HIV testing can help people who test positive receive treatment (50.3%). However, a large portion did not know how to use HIV self-testing 170 (89.0%), felt no embarrassment in seeking HIV testing services (79.6%), were not afraid of the HIVST results **(76.4%),** did not feel discriminated against based on HIV status 171 (89.5%), and did not experience stigma or discrimination for using HIV testing services (82.2%).

4.2 Uptake of HIV Self-Testing

Figure 2*: showing the level of utilization of HIV self-Testing service*



Regarding HIV self-testing, only 32 (16.8%) individuals reported having used HIV-ST as a method for HIV testing.

Table 3: Bivariate analysis of individual factors associated with HIV self-testing among young people aged (15-24years)

Variables	HIVST		COR (95% CI)	p-value
	Yes (%)	No (%)		
Respondents age in complete year				
15-17 years	7(26.9)	19(73.1)	1.0	
18-20 years	9(21.4)	33(78.6)	0.411(0.114-1.478)	0.173
21-23 years	11(12.9)	74(87.1)	0.556(0.168-1.835)	0.335
23-24 years	5(13.2)	33(86.8)	1.019(0.328-3.168)	0.974
Respondent's educational status				
Not gone to school	7(16.3)	36(83.7)	1.0	
Primary	5(15.6)	27(84.4)	0.807(0.268-2.425)	0.702
Secondary	20(17.2)	96(82.8)	0.847(0.252-2.843)	0.788
Gender				
Female	12(14.3)	72(85.7)	1.0	
Male	20(18.7)	87(81.3)	1.379(0.632-3.011)	0.420
Ever heard about HIVself-testing				
Yes	11(20.4)	43(79.6)	1.0	
No	21(15.3)	116(84.7)	0.708(0.315-1.589)	0.402
Know how to use the HIV self-testing in case you need to use it				
Yes	9(42.9)	12(57.1)	1.0	
No	23(13.5)	147(86.5)	0.209(0.079-0.550)	**0.002**
Felt embarrassed for going for HIV testing services including HIVST				
Yes	16(41.0)	23(59.0)	1.0	
No	16(10.5)	136(89.5)	0.169(0.074-0.385)	**<0.001**

Ever been afraid of the HIVST results				
Yes	14(31.1)	31(68.9)	1.0	
No	18(12.3)	128(87.7)	0.311(0.140-0.694)	**0.004**
Be discriminated in the community because of your HIV status				
Averagely	10(50.0)	10(50.0)	1.0	
Not at all	22(12.9)	149(87.1)	0.148(0.055-0.395)	**<0.001**
Felt stigmatized/discriminated because of using HIV testing services				
Yes	5(14.7)	29(85.3)	1.0	
No	27(17.2)	130(82.8)	1.2505(0.428-3.393)	0.725

Participants who did not know how to use HIV self-testing were significantly less likely to use it compared to those who knew (COR = 0.209, 95% CI: 0.079–0.550, p = 0.002).

Those who did not feel embarrassed to access HIV testing services were significantly less likely to use HIVST than those who felt embarrassed (COR = 0.169, 95% CI: 0.074–0.385, p < 0.001).

Participants who had never been afraid of HIVST results were significantly less likely to use HIVST compared to those who had fear (COR = 0.311, 95% CI: 0.140–0.694, p = 0.004).

Those who did not fear community discrimination due to HIV status were significantly less likely to use HIVST compared to those who had such fears (COR = 0.148, 95% CI: 0.055–0.395, p < 0.001).

4.3 Social economic factors influencing HIVST among the young people

Table 4: Univariate analysis of social economic factors of the respondents

Variables	Frequency (n)	Percentage (%)
Marital status		
Never married	70	29.5
Married	121	63.8
Occupation		
Business	39	17.8
Casual workers	40	18.3
Peasant	27	12.4
Student	85	38.9
Average household income in shillings		
≤108,000 shilling	121	63.8
>108,000 shilling	70	33.9
Number of people in the household		
≤5 people	115	65.7
>5 people	76	34.3
Ever been diagnosed with STIs		
Yes	24	11.5
No	167	88.5
Number of sexual partners		
None	40	18.9
One	109	51.6
Two	27	12.8
More than two	15	7.1

Most participants 121 (63.8%) were married, 85 (38.9%) were students, and 121(63.8%). had an average household income of ≤108,000 shillings. Most lived in households with ≤5 people (65.7%) and had never been diagnosed with STIs (88.5%). Regarding sexual partners, the majority had one partner 109 (51.6%).

Table 5: Bivariate analysis of social economic factors influencing HIVST among the young people

Variables	HIVST		COR (95% CI)	p-value
	Yes (%)	No (%)		
Marital status				
Never married	11(15.7)	59(84.3)	1.0	0.770
Married	21(17.4)	100(82.6)	1.126(0.507-2.500)	
Occupation				
Business	7(17.9)	32(82.1)	1.0	0.583
Casual workers	7(17.5)	33(82.5)	0.751(0.271-2.085)	0.624
Peasant	6(22.2)	21(77.1)	0.775(0.280-2.146)	0.322
Student	12(14.1)	73(85.9)	0.575(0.173-1.717)	

Average household income inshillings				
≤108,000 shilling	24(19.8)	97(80.2)	1.0	0.138
>108,000 shilling	8(11.4)	62(88.6)	1.918(0.810-4.537)	
Number of people in the household				
≤5 people	16(13.6)	99(86.1)	1.0	0.199
>5 people	16(21.1)	60(78.9)	1.6(0769-3.541)	
Ever been diagnosed with STIS				
Yes	6(25.0)	18(75.0)	1.0	0.253
No	26(15.6)	141(84.4)	0.553(0.210-1.525)	
Number sexual partners				
None	10(25.0)	30(75.0)	1.0	0.280
One	9(8.3)	100(91.7)	2.000(0.569-7.028)	**0.002**
Two	7(25.9)	20(74.1)	7.407(2.148-15.543)	0.348
More than two	6(40.0)	9(60.0)	1.905(0.496-7.308)	

Number of sexual partners was the only social factors that was significantly associated with use of HIVST.

4.3 Health facility factors influencing HIVST among the young people

Table 6: Univariate analysis of health facility factors of the respondents

Variables	Frequency n	Percentage (%)
Have a health facility/place where you can access the HIVST kit		
Yes	34	17.3
No	157	82.7
Kits always available for you		
Yes	22	11.6
No	169	88.4
Distance to Health Facility		
<5km	129	67.9
6-10km	28	14.7
>10km	34	17.9
Health facility provides education materials on HIVST among other HIV information		
Yes	22	11.6
No	72	37.9
Not sure	97	50.5
Received health education on HIVST from any source		
Yes	19	9.9
No	172	90.1

Most participants 157 (82.7%) did not have a health facility or place where they could access the HIV self-testing (HIVST) kit and 169 (88.4%), reported that HIVST kits were not always available to them. Most respondents 129 (67.9%) lived within 5km of a health facility but 97(50.5%) did not receive education materials on HIVST or other HIV information from

health facilities. Additionally, a large proportion 172 (90.1%), had not received health education on HIVST from any source.

Table 7: **Bivariate analysis of** health facility factors influencing HIVST among the young people

Variables	HIVST		COR (95% CI)	p-value
	Yes (%)	No (%)		
Have a health facility/place where you can access the HIVST kit				
Yes	13(38.2)	21(61.8)	1.0	
No	19(12.1)	138(87.9)	0.222(0.196-0.516)	**<0.001**
Kits always available for you				
Yes	8(36.4)	14(63.6)	1.0	
No	24(14.2)	145(85.8)	0.290(0.110-0.764)	**0.012**
Distance to Health Facility				
<5km	15(11.6)	114(88.4)	1.0	
6-10km	6(21.4)	22(78.6)	3.635(1.481-8.920)	**0.005**
>10km	11(32.4)	23(67.6)	1.754(0.553-5.559)	0.340
Health facility provides education materials on HIVST among other HIV information	10(45.5)	12(54.5)	1.0	
Yes	10(13.9)	62(86.1)	0.169(0.060-0.447)	**0.001**
No	12(12.4)	85(87.6)	0.875(0.356-2.155)	0.772
Not sure				
Received health education on HIVST from any source				
Yes	9(47.4)	10(52.6)	1.0	
No	23(13.4)	149(86.6)	0.172(0.063-0.467)	**0.001**

Participants who reported that HIVST kits were always available to them were less likely to use HIVST compared to those who said kits were not always available (COR = 0.290, 95% CI: 0.110-0.764, p = 0.012).

Participants who lived less than 5 km from a health facility were 3.6 times more likely to use HIVST compared to those living 6-10 km away (COR = 3.635, 95% CI: 1.481-8.920, p = 0.005).

Participants who received health education on HIVST from any source were less likely to use HIVST compared to those who did not receive such education (COR = 0.172, 95% CI: 0.063-0.467, p = 0.001).

Participants who had access to health education materials on HIVST at a health facility were less likely to use HIVST compared to those who did not (COR = 0.169, 95% CI: 0.060-0.447, p = 0.001).

4.4 Factors influencing HIVST among the young people aged 15-24 years

Table 8: Multivariate analysis of factors influencing HIVST among the young people aged 15-24 years

Variables	COR (95% CI)	p-value	AOR (95% CI)	p-value
Know how to use the HIV self-testing in case you need to use it				
Yes	1.0		1.0	
No	0.209(0.079-0.550)	**0.002**	0.652(0.107-0.951)	**0.041**
Felt embarrassed for going for HIV testing services including HIVST				
Yes	1.0		1.0	
No	0.169(0.074-0.385)	**<0.001**	0.209(0.170-0.618)	**0.005**
Ever been afraid of the HIVST results				
Yes	1.0		1.0	
No	0.311(0.140-0.694)	**0.004**	0.641(0.198-2.079)	0.459
Be discriminated in the community because of your HIV status				
Averagely	1.0		1.0	
Not at all	0.148(0.055-0.395)	**<0.001**	0.287(0.138-2.155)	0.225
Number sexual partners				
None	1.0		1.0	
One	2.000(0.569-7.028)	0.280	1.712(0.330-8.892)	0.552
Two	7.407(2.148-15.543)	**0.002**	3.907(1.762-7.039)	**0.002**
More than two	1.905(0.496-7.308)	0.348	4.894(0.557-8.017)	0.152
Have a health facility/place where youcan access the HIVST kit				
Yes	1.0		1.0	
No	0.222(0.196-0.516)	**<0.001**	0.377(0.154-0.617)	**0.024**
Kits always available for you				
Yes	1.0		1.0	
No	0.290(0.110-0.764)	**0.012**	3.343(0.311-8.979)	0.319
Distance to Health Facility				
<5km	1.0		1.0	
6-10km	3.635(1.481-8.920)	**0.005**	4.335(1.179-8.940)	**0.027**
>10km	1.754(0.553-5.559)	0.340	1.754(0.373-8.252)	
Health facility provides education materials on HIVST among other HIV information	1.0		1.0	
Yes	0.169(0.060-0.447)	**0.001**	1.712(0.117-5.057)	0.695
No	0.875(0.356-2.155)	0.772	0.879(0.311-2.484)	0.807
Not sure				
Received health education onHIVST from any source				
Yes	1.0		1.0	
No	0.172(0.063-0.467)	**0.001**	0.328(0.126-0.801)	**0.036**

Out of 10 variables were analyzed at multi- level only 6 were significant

Participants who did not know how to use the HIV self-testing kit in case they needed to use it were less likely to engage in HIV self-testing compared to those who knew how to use it (AOR = 0.652, 95% CI: 0.107-0.951, p = 0.041).

Participants who did not feel embarrassed about seeking HIV testing services, including HIV self-testing (HIVST), were less likely to avoid HIV testing due to embarrassment compared to those who felt embarrassed (AOR = 0.209, 95% CI: 0.170-0.618, p = 0.005).

Participants who reported having two sexual partners were 3.9 times more likely to engage in HIVST compared to those with no partners (AOR = 3.907, 95% CI: 1.762-7.039, p = 0.002).

participants who did not have a health facility or place to access HIVST kits were less likely to use HIVST compared to those who had access (AOR = 0.377, 95% CI: 0.154-0.617, p = 0.024).

Participants who lived 6-10 km away from a health facility were 4.3 times more likely to use HIVST compared to those living less than 5 km away (AOR = 4.335, 95% CI: 1.179-8.940, p = 0.027).

Participants who did not receive health education on HIVST from any source were less likely to use HIVST compared to those who received education (AOR = 0.328, 95% CI: 0.126-0.801, p = 0.036

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the findings and discussion basing on the main objective which was to determine the level and factors influencing the uptake of HIV self-testing among young people aged (15-24years) in Mukono Municipality. This was the first study carried out in this area.

5.1 Discussion

5.1.1 Level of uptake of HIV self-testing services

In this study, the prevalence of HIVST among young people aged (15-24years) was at 16.7% which could be attributed to heightened awareness and education about HIV and the importance of regular testing, driven by public health campaigns and community outreach programs. This is in line with study in Kenya found a prevalence of 21.4% for HIVST among young women, which was attributed to widespread educational campaigns that highlighted the convenience and confidentiality of self-testing (Ngure et al., 2021). Similarly, in South Africa, another study reported a 19.8% prevalence of HIVST among young women, which was linked to comprehensive community-based programs that emphasized the importance of HIV testing and provided easy access to self-testing kits (Lippman et al., 2023). Furthermore, a study in Zambia highlighted that the prevalence of HIVST among young women was

18.2%, with community outreach efforts, including peer education and the distribution of free or subsidized HIVST kits, playing a key role in this increase (Chanda et al., 2021). Contrastingly, a study conducted in rural Malawi found a lower prevalence of HIVST among young women at 10.5%, which was attributed to limited access to HIVST kits and insufficient educational outreach (Johnson et al., 2023). A lower prevalence was reported in Uganda, with HIVST prevalence of 15.3% among young women (Musoke et al., 2023). Conversely, a study showed that HIV self-testing services are utilized by less than a third (29%) of the respondents (Khatoon et al., 2023) and in Brazil found that 5.6% of study participants utilized HIV self-testing services (Desta et al., 2021). The variation in the prevalence of HIV self-testing (HIVST) among young women across different studies can be attributed to several factors, including the intensity and scope of educational campaigns, community engagement efforts, and accessibility to self-testing kits. This implies that public health campaigns and community outreach programs play a crucial role in increasing awareness and acceptance of HIVST among young women. This underscores the need for continued investment in educational campaigns that emphasize the benefits of regular HIV testing and the convenience and confidentiality offered by self-testing kits.

5.1.2 Factors influencing HIV self-testing among young people aged (15-24years)

In the present study, utilization of HIV self-testing was more likely among individual who knew how to use the HIVST than individuals who did not know how to use HIVST. This is probably because knowledge about the correct procedures for self-testing such as how to collect and handle samples, interpret results, and understand follow-up steps reduces uncertainty and fear. This is supported by study by Lippman et al. (2023) who revealed that confidence in using HIVST was associated with increased uptake, as individuals who felt capable of performing the test were more likely to use it. Similarly, Hensen et al. (2021) supports this, finding that perceived ease of use and clear instructions were significant predictors of HIVST uptake. Additionally, knowledge about HIVST often correlates with better health literacy, which plays a crucial role in the adoption of health behaviors. Health literacy includes not only understanding how to use the test but also recognizing its benefits and importance. Choko et al. (2021) demonstrated that individuals with higher health literacy were more likely to use HIVST because they were better informed about the testing process and its advantages. Similarly, Hensen et al. (2021) found that enhanced knowledge and education about HIVST were linked to increased usage rates, as individuals with greater

health literacy could navigate the self-testing process more effectively. Furthermore, knowing how to use HIVST kits often means that individuals have access to educational resources or support networks that provide guidance on the testing procedure. This support can come from healthcare providers, community health workers, or educational materials. Research by Lippman et al. (2023) emphasized the role of education and support in improving the uptake of HIVST, noting that individuals who received proper instructions and support were more likely to engage in self-testing. In contrast, individuals who are unfamiliar with how to use HIVST kits might experience uncertainty and reluctance, which can hinder the uptake of HIV self-testing. As highlighted in research by Kalibala et al. (2023), gaps in knowledge and lack of clear instructions can lead to lower utilization rates, as individuals may be discouraged by the complexity or potential for incorrect use. This implies that effective public health strategies should focus on providing clear, accessible instructions and support to ensure that individuals are confident and informed about using HIVST kits.

In addition, the study indicated that respondents who did not feel embarrassed about seeking HIV testing services, including HIV self-testing (HIVST), were less likely to avoid HIV testing compared to those who experienced embarrassment. This is consistent with previous studies have shown that individuals who perceive high levels of stigma related to HIV are less likely to seek testing services, leading to delayed diagnosis and treatment initiation (Pantelic et al., 2022; UNAIDS, 2021; Davies et al., 2020; Johnson et al., 2022; Nyblade et al., 2022)). Similarly, a study by Musheke et al. (2023) found that fear of negative social judgment prevents people from utilizing HIV testing services, particularly in communities where HIV is highly stigmatized. Furthermore, Research by Indravudh et al. (2023) in Malawi and Zimbabwe revealed that despite the availability of HIVST kits, individuals with strong stigma-related concerns were less likely to use them. These findings align with the current study, emphasizing that psychological and social factors can override even the most accessible and confidential HIV testing options. This implies that integrating HIVST education into routine healthcare interactions can provide individuals with the necessary information and confidence to self-test without fear of judgment.

The study found that the utilization of HIVST was 3.9 times more likely among individuals who had three sexual partners than individuals who had no sexual partners. This is probably because individuals with two sexual partners might perceive themselves at higher risk for HIV compared to those with no sexual partners. This perceived risk can drive individuals to

seek out more frequent and private testing options, such as HIV self-testing (HIVST). This is similar to Choko et al. (2021) who found that perceived risk significantly influences the decision to engage in HIV self-testing, supporting this finding. Additionally, Lippman et al. (2023) observed that individuals with higher health consciousness are more proactive in seeking testing services. Similarly, Hensen et al. (2021) highlighted that individuals who engage in frequent sexual activity often adopt regular testing practices, which could explain their higher use of HIVST. Finally, previous testing experience can influence the likelihood of using HIVST. Those who have used various testing methods before may be more comfortable with and open to trying self-testing kits. Pant-Pai et al. (2023) found that familiarity with testing methods positively impacts the acceptance of HIVST. This implies that public health initiatives should focus on individuals with multiple sexual partners to emphasize the importance of regular testing and the benefits of HIVST.

The study found that the uptake of HIVST was positively associated with having health facility/place where one can access HIVST kits when needed. This is probably because increased accessibility and availability of HIVST kits, makes it easier for young women to obtain and use them privately and conveniently. This is like Geng et al. (2021) who indicated that HIV self-testing was more likely to be successful if kits were distributed by peers compared to health facility pick up. The direct provision model was more likely the priority due to the likely privacy it could offer for the adolescents and young women who are likely to be stigmatized by society. In addition, UNAIDS (2020) stated that the number of ways HIVST testing kits are distributed has significantly increased the use of HIVST among the population. Similarly, Ngure et al. (2021) reported that in Kenya, the availability of HIVST kits at accessible locations significantly increased their uptake among young women. Similarly, Lippman et al. (2023) found in South Africa that the provision of HIVST kits through community-based programs, which ensured easy access, was associated with a higher prevalence of HIVST among young women. In addition, in Zambia, Chanda et al. (2021) demonstrated that the distribution of free or subsidized HIVST kits through peer educators and community outreach programs led to a higher uptake of HIVST among young women. Furthermore, Johnson et al. (2023) found that in rural Malawi, limited access to HIVST kits was a significant barrier to their uptake. Lastly, In Uganda, Musoke et al. (2023) observed that young women who had easy access to HIVST kits at health facilities were more likely to use them. This implies the importance of integrating HIVST kits distribution into

existing health services to ensure that adolescents and young women can conveniently obtain and use the kits.

The finding that respondents who lived 6-10 km away from a health facility were 4.3 times more likely to use HIV self-testing (HIVST) compared to those living within 5 km suggests that distance may act as a motivating rather than a limiting factor for HIVST uptake. This could be attributed to the challenges associated with long-distance travel to health facilities, including transport costs, time constraints, and stigma associated with facility-based testing, which may encourage individuals to opt for the more convenient, private, and accessible self-testing kits (Nguyen et al., 2022). Previous studies have also reported that individuals residing in remote areas often face healthcare access barriers and thus prefer self-testing options to overcome geographical limitations (Choko et al., 2023). However, this finding contrasts with other research indicating that longer distances to health facilities generally result in lower healthcare utilization due to logistical challenges (Muhumuza et al., 2021). The higher likelihood of HIVST uptake among those further from health centers in this study may reflect increased awareness and availability of HIVST kits through community-based distribution models or peer-led initiatives, which have been found effective in rural and hard-to-reach settings (Indravudh et al., 2020). This highlights the need for targeted interventions to ensure that HIVST kits remain accessible to all populations, including those closer to health facilities who may still face barriers related to confidentiality concerns or lack of awareness.

The findings of this study indicate that respondents who did not receive health education on HIV self-testing (HIVST) from any source were less likely to use HIVST compared to those who had received such education. This is probably because access to health education significantly influences HIVST uptake, highlighting the critical role of awareness campaigns in promoting self-testing behavior. Similar studies have demonstrated that targeted education programs increase knowledge, reduce misconceptions, and enhance self-efficacy regarding HIV testing (Okoli et al., 2021; WHO, 2022). Lack of information leads to fear, stigma, and uncertainty about the reliability and procedure of self-testing, thereby discouraging its adoption (UNAIDS, 2020). Furthermore, health education provides an opportunity to address barriers such as myths, perceived risks, and concerns about confidentiality, which have been shown to deter individuals from seeking HIV testing services (Njau et al., 2022). This finding aligns with global recommendations advocating for the integration of HIVST education into

routine community health interventions to improve accessibility and uptake, especially among hard-to-reach populations (WHO, 2022). Therefore, this implies that investing in structured and widespread health education programs on HIVST could be a key strategy to improve testing rates and ultimately contribute to early diagnosis and linkage to care, reducing the overall burden of HIV.

5.2 Strength and limitation of the Study

Measurement of most variables relied on memory in this study. Hence, training of data collectors, regular supervising and appropriate probing techniques were used in the study to minimize recall bias. The study being mixed cross-sectional in nature, it could not show the causal relationship between the response and explanatory variables thus, only associations other than causal inference were established. Also, the findings of this study may not be generalizable for all area in Uganda since Mukono district is only one district out of 146 districts, along with one city.

45.3 Conclusions

- The study found that the overall utilization of HIV self-testing (HIVST) among young people aged 15–24 years in Mukono Municipality was low, at 16.8%. Several factors were identified as influencing uptake. Knowledge of HIVST emerged as a key determinant, with individuals unfamiliar with self-testing being significantly less likely to use it. Social and psychological barriers, particularly embarrassment associated with accessing conventional HIV testing services, also limited uptake, highlighting the need for interventions aimed at reducing stigma.
- Sexual behavior influenced HIVST utilization, as participants reporting multiple sexual partners were more likely to engage in self-testing, possibly reflecting a heightened perception of HIV risk. Accessibility of HIVST kits was critical; the absence of designated points for obtaining kits was associated with lower uptake. Conversely, participants living farther from health facilities were more likely to use HIVST, suggesting that convenience and privacy are important motivators.
- Finally, young people who lacked exposure to information about self-testing were significantly less likely to use HIVST, indicating that targeted awareness campaigns could enhance uptake.

5.4 Recommendations

Based on the findings of the study, the following recommendations are made.

1) Health authorities in Mukono municipality should initiate targeted public education campaigns about HIV self-testing (HIVST) for the local population, with a particular emphasis on adolescents and young adults. These campaigns should utilize local platforms, such as community radio stations, town hall meetings, and outreach programs at local health centers, to ensure that information reaches people with varying educational backgrounds.
2) Health facilities in Mukono municipality should ensure that HIVST kits are made available not only in urban areas but also in rural communities. The distribution of these kits should be supported by locally relevant educational materials and instructions, which are accessible and understandable to the population, considering the local languages and literacy levels.
3) Healthcare providers in Mukono municipality should establish comprehensive support systems for individuals who test positive using HIVST. This should include culturally sensitive counseling services, easy access to confirmatory testing, and integration into care and treatment programs that are free from stigma or discrimination.
4) Local policymakers in Mukono municipality should work together with community leaders to create programs that address and reduce HIV-related stigma. This can be achieved through training workshops for community influencers, religious leaders, and local health workers on how to foster supportive environments for HIV testing and treatment.
5) Adolescents and young adults in Mukono municipality who have used HIVST should be encouraged to share their experiences and serve as peer educators. Their involvement in community outreach activities will help to normalize HIV self-testing among their peers, increasing overall community engagement and awareness around HIV prevention and testing.

Area of further study

6) Explore the impact of community-based distribution models on the accessibility and utilization of HIVST services, especially in rural and underserved areas.
7) Carrying out a longitudinal study on the long-term outcomes for individuals who use HIVST, including their linkage to care and treatment adherence

8) Study the effectiveness of different educational strategies on increasing the uptake of HIVST, particularly among those with lower educational levels.

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APPENDIX I: INFORMED CONSENT FORM

Dear respondent,

I **Annah Kukundakwe**, a student of Uganda Christian University pursuing a Master Degree in Public Health leadership am conducting a study title "**Factors influencing the level of uptake of HIV self-testing among young people aged (15-24years) in Mukono Municipality**" as part of the requirements for the award of master degree in Public Health by the university.

You have been selected on merit for your legibility to provide the necessary information required. However, any information that will be provided will be used mainly for academic purposes and will be treated with utmost confidentiality.

Your participation is entirely voluntary, you have the right to decline to participate, to withdraw any statement before analysis or discontinue your participation and this will not affect you in any way. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

There are no physical benefits for participation in this study, however these findings will help in coming up with strategies to improve on HIV self-testing among young people.

If you have any questions, concerns or complaints about this study contact the researcher, Annah Kukundakwe, on Tel: +256 774179831 or email: kukundakweanna@gmail.com /kukundakweA@ipas.org If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the supervisor on Tel: respectively.

Confidentiality: The respondents will be assured that the information they pass on will be kept as confidential information, and that it will be used in such a way that it will not be traced back to a particular respondent. The respondents will also be assured of maximum respect during the entire process of data collection

Respect for Respondents: in addition, the right to decide whether or not to participate in the study will be explained. Similarly, the Researcher will inform the respondents that they were free to choose not to answer particular questions that they feel they should not answer. Lastly,

a consent/assent form will be availed to the respondents for signing after an elaborative explanation of the subject matter in the research study.

The privacy of the participants will be duly respected as they will not be compelled to respond to questions which they will not be comfortable with. The identities of the participants will be made anonymous and collected data cannot be traced to any of them.

Harm or risk of participants:

Compensation of participants:

Assessment of understanding

I hereby confirm that I understand the contents and nature of the document and therefore consent to be interviewed by this researcher carrying out the above-mentioned study. I have been assured of total confidentiality, and that the results of this study shall not identify me anywhere in any way since my name is not needed and it shall not appear anywhere in this questionnaire. And in any case, my refusal to answer questions shall not affect me or any member of my family.

Signature/thumbprint of respondent ______________________

Signature of researcher ______________________

Date: ______________________

Date: ______________________

APPENDIX II: QUESTIONNAIRE

Introduction

Serial No. ……………………………………………………..

Section A: Individual factors influencing HIVST among the participants

s/n	Information	Possible options	Tick the appropriate response
1	Respondents age in complete year	15-17 years 18-20 years 21-23 years 23-24 years	
2	Respondent's educational status	Not gone to school Primary Secondary Tertiary	
3	What is your gender?	Male Female	
4	Have you ever heard about HIVself-testing?	Yes No	
5	Where did you hear it from? (Tick what is mentioned)	Family member Friend Community VHT Radio, TV Others	

6	What benefits does a person get in going for HIV testing?	People who test positive can get treatment. Effective at preventing spread from those who are positive to the negative. It also enables positive living through referral to social groups like (TASO) and peer support groups. Increases community awareness aboutHIV Reducing stigma among HIV/AIDSpeople Helps plan for future	
7	Do you know how to use the HIV self-testing in case you need to use it?	Yes ☐ No ☐	
8	Have you felt embarrassed for going for HIV testing services including HIVST?	Yes ☐ No ☐	
9	Have you ever been afraid of the HIV self-test results in case youtest?	Yes ☐ No ☐	
	If Yes Why?	…………………………………… … …...............……………………….....	
10	Do you think you will be discriminated in the community because of your HIV status?	Highly ☐ Averagely ☐ Not at all ☐	
11	Have you felt stigmatized/ discriminated because of using HIV testing services?	Yes ☐ No ☐	
12	If yes to question above, what has made you feel so?		

Section B: Social economic factors influencing HIVST among the young people

s/n	Information	Possible options	Code and remarks
13	Marital status	Never married Married Widowed	
15	What is your occupation?		
16	What is your average household income inshillings	....	
17	Including you, how many people live in your household?	....	
19	Have you ever been diagnosed with STIS	Yes ☐ No ☐	
20	If yes, which STIs did you suffer from	....	
21	How many sexual partners do you have?	....	

Section C: Health facility factors influencing HIVST among the young people

s/n	Information	Possible options	Code and Remarks
23	Do you have a health facility/place where youcan access the HIVST kit if you need it?	Yes No	
24	If yes, what is the place		
25	Are the kits always available for you when you need the service?	Yes ☐ No ☐	
26	Distance to Health Facility	<5km ☐ 6-10km ☐ >10km ☐	
27	How does distance to the facility affect your uptake of HIVST	....	
28	Does the health facility provide education materials on HIVST among other HIV information?	Yes ☐ No ☐ Not sure ☐	

29	Have you received health education on HIVST from any source?	Yes ☐ No ☐	
30	If yes, from where was the health education provided?	....	
31	If yes, what was the health education about?	....	

Section D: Uptake of HIV Self-Testing

s/n	Information	Possible options	Code and Remarks
32	Have you ever tested for HIV?	Yes ☐ No ☐	
33	If yes, have you ever used HIV-ST as a means of HIV testing?	Yes ☐ No ☐	
34	If yes, what method did you use?		

Thank you for participating

AKAWAYIIRO 1: FFOOMU YO OKKKIRIRZA NGOTEGEEZEDDWA OMUGANZI OMUWAWAABIRWA,

Nze, Annah Kukundakwe omuyizi ku Uganda Christian yunivaite nkola diguli eyo kubiri mu Public Health Leadership. Ndimukoola okunonyereza ku "Ensonga ezifuga omutindo gw'okwekebeeza bokka akawuka ka siriimu mu bavubuka abemyaka 15-24 mu Mukono Municipality nga kubimu ebyetagisibwa okumaliriza diguli eyokubiri mu Public Health mu yunivasite.

Olondeddwa nga omu okusobola okuwa omawulire ageetaagisa, naye amawulire ago gonotuwa gajja kozesebwa mu bya kusoma era gajja kutwalibwa ngekyama.

Okwetaba kwo kwa kyeyagalire ddala. Oyina eteka okugaana, oba okuvaamu ate kino tekikukoosa mugeeri yonna. Tewajja kubawo kubonerezebwa kwona kwonofuuna bwonoba tewetabye mu kunonyerezebwa kuno

Tewajja kubawo kyona kyojja kufuua nga wetabye mu kunonyereza naye byetunaaba tuzudde bijja kuyamba okufuna engeri jjetulongosamu ku kwekebeza akawuka ka sirimu ngaffe mu bavubuka .

Bwoba oyina ky'obuuza, oba kyowabula ku kunonyereza kunno, kubira omunonyereza, Annah Kukundakwe ku simu namba +256-774179831 oba emailo: kukundwakweanna@gmail.com / kukundakwe@ipas.org .

Ekyama: Abanaba betabya mukunonyereza bajja kutegezebwa nti amawulire bajja kukakasibwa nti amawulire gajja kutwalibwa / kutelekwebwa ekyama. ekisinga obunene mu nkola yonna eyukukungaanya ebikwata ku bantu.

Ekitiibwa ku babuuzibwa: okugatta ku ekyo, eddembe lyikusala wo oba okwetaba mu kunonyereza kuno oba nedda, kujjya kunnyonnyolwa. mungeri yemu omunonyereza ajja kutegeeza aba buziddwa nti badembe .Ekisembayo obutaddamu bibuuzo byebatagala kuddamu. Ekisembayo,ffoomu yo kukiriziganya ejja kuwembwa okutekako omukono nga omazze okufuna ebikwata ku kuonyer4eza kuuno. Okwekuuma kwabantu abeetabye kujja kwatibwa nekitibwa nga tebajja kusindikirizibwa kuddamu bibuuzo –bye batayagala. Ebikwata kubanonyerezi tebijja kumanyibwa era ebiwadiiko ebikunganyizidwa tebisobola kulondoolwa muntu yenna.

Obulabe oba akabi ko bantu eyeettabye mu kutendekebwa:

Okuliyirira abeetabye:

Okwekenenya okutegeera:

Nkakasa nti tegedde ebirimu kiwandika era no lwekyo nziiriza okubuuzibwa ebibuuzo omunoonyereza ono. bampadde essuubi erimala ku kyama era ebiiiiiinavaamu mu kunoonyerezatebijja kuddayo wantu woona kubanga erinnya lyange telyetagusibwa, era okugaana kwange tekujja kutataganya nze oba omuntu yenna mu famire yange.

Omukono /Ekikimu kyo omunonyerezi………………………………………………………

Ennaku zo omwezi…………………………………………………..

Omukono ngwa nonyereza …………………………………

Ennaku zo mwezi ……………………………………………………………

AKAWAYIIRO II:

Okwanjula

Akabondo A : Ensonga z omuntu kinoomu ezikwata ku kwekebejja akawuka ka siriimu mu beetabye

	Amawulire	Enkola ezisoboka okusaza/okutikirga
1	Emyaka	15-17 18-20 21-23 23-24
2	Embeera yo buyigirize	Teyagenda ku ssomero Pulayimate Siniya Yunivasite
3	Obutonde	Musajja Mukazi
4	Waali Owulideeko ku kwekebeza kwa siriimu okwa kinoomu	Yee Nedda
5	Wakiwulidde kuva wa?	Owo Luganda Mukwano gwange Musawo wo ku kyalo Leediyo Tv

		Ebirala
6	Migaaso ki omuntu jjakuufa mu kwekebeza aka siriimu okwa wa	Abantu abekeebeza nga balina akawuka bafuuna eddagala Ekyo kikola okukeendeza ensasaanya yakawuka okuva kwalina okutuka kwatalina Era kisobozesa obulamu obulunji nga wegaaseku bibiina bye mbeera za bantu okugeeza nga TASO ,ebibiina ebiwagira bannabwe. Okwongera okumanyisa abantu ku siriimu mu kitundu Okukendeeza ku ku vumwa mu bantu ba siriimu Kiyamba okuteeka ebiseera ebyomumaaso
7	Omanyi okukozeesa enkola yo kwekebeza akawuka ka siriimu kinoomu bwoba okyetaaze	Yee Nedda
8	Waali owuliddeko okuswaala nga ogenda okwekebeeza akawuka ka sirimu omuli nokwekebeza kinoomu?	Yee Needa
9	Waali owuliddeko okutya ebivudde mukwekebeeza siriimu okwakinoomu bwoba wekebedde ?	Yee Needa
	Bwekiba kyeko,lwaki	
10	Olowooza ojja ku sosolwa mukitundu olwembeera yo eya siriimu	Wa ggulu nnyo Mu kigero kya wakati Nedda
11	Waali owuliddeko okusosolebwa olwokuba okozesa enkola yo kwekebeza siriimu kinoomu	Yee Nedda
12	Singa yee,kiki ekikuleteeade okuwulira bwotyo	

	AKABONDO B: Ensonga ze byenfuna mu mbera za bantu ezifuga okwekebeeza kwa sirimu okwa kinoomu mu bavubuka	
13	Embeera yo bufumbo	Yeyafumbirwako Mufumbo Nnamwandu
14	Omulimu	
15	Enyingiza yo eya bulijjo eri etya?	
16	Muli bameka awaka	
17	Waali ozuuliddwa nga olina obulwadde bweki kaba?	
18	Singa yee, bwebuliwa	
19	Oyiina ababeezi bamekka	

AKABONGO C: Ensonga zekifo kye byobulamu ezifuga okwekebejja akawuka kasiriimu okwa kinoomu mu bavubuka

20	Omanyi ekifo kye byobulamu /ekifa wosobola okufuna enkola ya kwekebeza siriimu kinoomu	Yee Nedda
21	Singa YEE, kifo ki?	
22	Ebikeebera biberawo buli wo beera obyagadde	Yee Nedda
23	Ebanga okutuuka ku kifo kyebyobulamu?	<5km 6-10km <10km
24	Ebanga erigenda mu kifo kino likosa litya okukebera akawuka ka siriimu kinoomu?	
25	Ekifo kye byobulamu kiwa ebikozesebwa mu kusomesa ku kwekebejja sirimu kinnomu	
26	Waali ofunye okusomesebwa ku byo bulamu okukwata ku kwekebeza kwa sirimu kwa kinoomu okuva mu sonda yonna	Yee Nedda
27	Singa yee,waa ewali okusomesebwa gye	

	kwaweebwa	
28	Singa yee, okusomesebwa kwe byo bulamu kwali kukwata kuki?	
29	Wali wekebezaako akawuka ka sirimu?	Yee Nedda
30	Singa yee,wali okozesezako enkola yokwe kebeza akawuka ka siriimu aya kinoomu	Yee Nedda
31	Singa Yee, wakozesa kika ki	Yee Nedda

Webale kwetabamu

APPENDIX III: KEY INFORMANT INTERVIEW GUIDE

Date………/………./………… Venue…………………

Interviewer's name…………………………

Designation of the Key informant.......................

Time: Start…………. Finish……….

Time for discussion: 45minutes.

INSTRUCTIONS

- Introductions.
- Explain purpose of study.
- Assure key informant of confidentiality.
- Ask key informant for their informed consent to participate in the discussion.

QUESTIONS

- What can you tell me about HIVST*? Probe to find out if they have heard about HIVST, where to get itfrom, how it works and persons who are supposed to use it?*
- In your own opinion why do most the young people in this community use HIVST if any? *Probefor factors that boost use of HIVST among the resident?*
- Are you aware of any personal/individual factors among the young people here that are detrimentalto the use of HIVST services? *Please probe for myths/misconceptions*
- In your opinion what challenges do young people here face as they seek HIVST services in this community? *Probe for social economic factors, health system related concerns hindering use of HIVST.*
- What do you think can be done to improve utilization of HIVST services by young people as is required in this community?

Thank you for your cooperation and your time.

APPENDIX IV: FGD Guide

Date………/………./…………   Venue…………………

Time: Start…………. Finish……….

Introduction:

Welcome and introductions

Ask participants to introduce themselves by name and age.

Mention the purpose of the focus group, which is to gather their thoughts and experiences regarding HIV self-testing among adolescents.

Icebreaker: 2. Icebreaker question

Start with a light, non-HIV related question to help participants get comfortable and build rapport within the group.

Understanding Knowledge and Awareness: Knowledge about HIV and HIV self-testing

What do you know about HIV and how it is transmitted?

Have you heard about HIV self-testing before? If yes, where did you hear about it?

What are your initial thoughts or perceptions about HIV self-testing?

Perceptions and Attitudes: Perceptions and attitudes towards HIV self-testing

How do you feel about the idea of self-testing for HIV?

Do you think it is important for adolescents to have access to self-testing? Why or why not?

What do you think might be the benefits and drawbacks of HIV self-testing for adolescents?

Barriers and Facilitators: Barriers to HIV self-testing

What do you think might prevent adolescents from using self-testing kits?

Are there any concerns or fears you have about self-testing?

Facilitators of HIV self-testing

What factors would make HIV self-testing more appealing or accessible to adolescents?

How can schools, healthcare providers, or community organizations support adolescents in using self-testing kits?

Experience and Preferences: Personal experiences and preferences

Have any of you ever used an HIV self-testing kit or know someone who has?

What was the experience like? What did you like or dislike about it?

Do you prefer self-testing over traditional testing methods, such as going to a healthcare facility or clinic? Why or why not?

Confidentiality and Support: Confidentiality and support

Do you have concerns about privacy and confidentiality when it comes to self-testing?

Who would you turn to for support or guidance if you were to use an HIV self-testing kit?

Education and Information: Education and information needs

What information or resources do adolescents need to make informed decisions about HIV self-testing?

Where should adolescents get this information?

Is there any other information that you need to share

Thank you for your participation.

AKAWAYIIRO IV: Okukubagamya ebieowoozo mu bibinja okussa

Enaku zo mwezi ……………………

Saawa…………………………

Ekifo……………………..

Enyanjula

Okwaniriza no kwanjula.

Saba abeetabye mu beeyanjule ,amanya ne myaka

Yogera ekigendererwa kyekibiina ekitunuulirwa , ekiri mukukunganya ebirowoozo byabwe nebyo bye bayitaimu ku bikwata ku kwekebejja akawuka ka siriimu aka kinoomu mu bavubuka.

Okuwumula : ekibuuzo

tondika n'ekitangaala , ekibuuzo ekitawatayara na kawura ka siroomu okuyamba abantu okubeera abakakamu no kufuna enkolyana nu kibinja.

okutegeera amagezi n'okutegeera ; okutegeere ku kawuka ka siriimu n'o kwekebejja kwe kinawmu akawuka ka siriimu

kiki ky'omanyi ku siriimu n'engeri gyasiigibwa mu?

wali owuliddeko okwe ke beza kwa kawika ka siriimu okwe kinwmu ? singa yee, wakiwulirira wa ?

ebiroowozo ki ebyo abo endawooza zo mu kusooka ku kwekebeza akawuka ka sirimu kinoomu?

Endowowooza neneyisa :endowoza neneyisa ku kwekebeza akawuka kinoomu. Owulira otya ku ndowooza yo kwekebereza kinoomu akawuka akasiriimu? Olowooza kikulu eri abavubuka okuba nobusoboozi okwekebera? lwaki oba lwaki nedda? Olowoza kiki ekiyinza okuba ne migaso neizibu ebiri mu kwekebejja kinoomu akawuka ka siriimu mu bavubuka. Ebiziyiza na abalungamya : Ebbiziyiza ku kwekebejja kinoomu olowooza kiki ekiyinza okulemesa okukozesa ebikozesa ebikozesebwa mu bavubuka? Walio okweralikirira oba okutya kwonna kwolina ku kwekebeza?

Abalungamya mu kukebera akawuka ka siriimu okekinoomu. Ensonga ki ezandifudde okwekebejja kwa kinoomu akawuka ka siriu okusiskiriza oba okutuukiriza eri abavubuka?

Amasomero, abagaba ebyo bulamu oba ebibiina byo mukitundu bisobola bitya okuwagira abavubuka mu kukozesa ebikozesebwa ebwo kwekebejja akawuka ka siriimu? Obumanyirivu nebyo bye baagala: obumanyirirvu nebyo byo yagala ku bubwe wali okozesako ebikebeeza akawuka kasiriimu kinoomu oba omunyi omuntu alina ebikozesebwa? obumanyirivu obwo bwali butya?kiki kyewayagala oba kyotayagala ku kyo? Osinga kwagala kwekebera kun kola

zokukebeza eya nakinoomu oba enkola enkade okugeza okugenda mu malwaliro? lwaki oba lwaki nedda?

Ebyama no buwagiziz: ebyama no buwagizi

Olina okweralikirira kwo nna ku byekyama bwe kituuka ku okweralikirira kwo nna byekyama bwe kituuka ku kwekebeza.

Ani gwe wandikyukidde okufna obuyambi oba obulalagirizi singa okozesa akozesebw okwekebeza akawuka ka siriimu? Okusomesa na mawulire: Ebyetaago byo okusomesa namawulire amawalire oba ebikozesebwa ki abavubuka bye betaaga okusalawo mu ngeri okoleddwa ku kwekebejja akawuka ka sirrimu kinoomu? Abavubuka basobola kufuna wa amawulire gano? wali amawulire gona gosobola okugabaana?

Wali kwetaba mu kunoonyereza kuno.

APPENDIX V

UGANDA CHRISTIAN UNIVERSITY

SCHOOL OF RESEARCH & POSTGRADUATE STUDIES

DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 26/09/2025

Name of Candidate: **KUKUNDAKWE ANNAH** **Reg. No:** RM22M/**07/003**

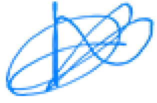
Title of Dissertation: **LEVEL AND FACTORS INFLUENCING THE UPTAKE OF HIV SELF-TESTING AMONG YOUNG PEOPLE AGED (15-24YEARS) IN SELECTED HEALTH FACILITIES IN MUKONO MUNICIPALITY**

COMMENTS BY EXAMINERS

SN	COMMENTS BY EXAMINERS	page	ACTION TAKEN	INDICATOR
1	Please specify and reflect your area of study in the topic	Cover page	The area of the study was included in the title	Title has the study area
2	Who are your study population, how did you come to 174 participants? Clearly specify the who the 191 are.	22 and 23	The 174 was the size without the 10% non-response rate. But on addition to the non-response rate of 17, the study sample size was 191	Revised the sample size
3	-Who are the kIs and FGDs and how did you get to them. Clearly state these and describe them.		I was advised to remove the qualitative aspect of	The qualitative aspect was removed

	-How did you get to the themes?		the study throughout the document	
4	-You need to clearly understand what those p values need so that you can own your study		I got to understand the values of the study	I am well acquainted with the study findings
5	The candidate should correct the grammatical errors in the dissertation.	Throughout the document	The grammatical errors were corrected	Grammar error free
6	The candidate should make operational definitions for HIV self-testing.	viii	HIVST definition has been operationalized	Revised operation definition if HIVST
7	The candidate should abandon the qualitative component since all her objectives have been sufficiently answered by the quantitative component.		The qualitative aspect was removed	The qualitative method was removed
8	4. The candidate should describe the study procedure clearly so that we understand how the candidate worked with the health facility management and staff to Identify, approach and introduce the study to potential participants. Who screened, consented and enrolled the participants into the study? Where did the interview process take place?	25 and 26	The study procedure is well stipulated in the methodology section	Clear explanation about study procedure
9	The sample size estimation was 174, why did the candidate collect data from 191 participants?	22 and 23	The 174 was the size without the 10% non-response rate. But on addition to the non-response rate of 17, the study sample size was 191	Revised the sample size
10	The candidate should describe how the data was managed and entered in a statistical programme for analysis and who did the data entry, data cleaning and analysis.	26	The data management procedures were explained	Explanations were made on data management
11	How did the candidate select variables for the multivariate analysis.	27	Explanations on how the variables were considered for multivariable analysis was added	The variables for multivariable analysis explained
12	The candidate should bullet the conclusion	51	The conclusions were bulleted	Aligned in bullet format

Kukundakwe Annah



Rev. Canon Evatt M. Mugarura

Candidate's Name & Signature **Supervisor's Name &Signature**

APPENDIX IV: BUDGET

S/No.	Items	Quantity	Unit Cost In (Ugx)	Total Cost In (Ugx)
1	Printing and binding of the proposal	1 copy	100,000	100,000
2	Printing of questionnaires for pre testing	25 copies	1000	25000
3	Transport- Fuel	3 people	100,000	300,000
4	Printing questionnaires for data collection	180 copies	500	90,000
7	Air time for communication	4 people	10,000	40,000
8	Incentives for research assistants	3 people	150,000	450,000
9	Printing, photocopying and binding preliminary research report	1 copy	50,000	50,000
10	Printing, photocopying and binding final research report	3 copies	50,000	150,000
11	Internet surfing	Lump sum	100000	100,000
12	Research Fee		500,000	500,000
13.	IRB fee		180,000	180,000
	Total			**1,788,000**

APPENDIX V: STUDY TIMELINE

Activity	Aug- October	April- June	July 2024	Aug 2024	Sept	**Person responsible**
Approval of research Topic						HLM office
Approval of research proposal						Supervisor
Writing research proposal						Researcher
REC review and Approval						UNCST
Pretesting questionnaire						Researcher
Reporting to field						Researcher
Data collection						Researcher
Data entry						Researcher
Data analysis and Interpretation of results						Researcher
Report writing						Researcher
Binding of hard cover books						Researcher
Dissemination of results						Researcher