MAKERERE UNIVERSITY

COLLEGE OF HEALTH SCIENCES

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UTILIZATION OF HIV TESTING SERVICES AMONG ADOLESCENTS AGED 10-19 YEARS IN SOROTI DISTRICT, UGANDA

BY

NAME: OKELLO PETER SIMON

REG. NUMBER: 2016/HD07/2102U

Supervisors

Prof. Rhoda Wanyenze

MS. Christine Muhumuza

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DECLARATION

I do here declare to the best of my knowledge; this dissertation is my original work and has never been submitted to this university or any other institution of higher learning for an academic award or publication. I hereby submit it for the award of the degree of Master of HealthServices Research of Makerere University.

..... Date 6/12/2019

Okello Peter Simon (Author)

This dissertation has been submitted with the approval of the following University supervisors;

..... Date 6/12/2019

Prof. Rhoda Wanyenze – Makerere University School of Public Health

..... Date 06th - Dec. 2019

Ms. Christine Muhumuza – Makerere University School of Public Health

Dedication

I dedicate this work to my God and heavenly Father, and my companion in the Grace of Life; Lydia Kemigabo Achweo (Mrs), my sons; Benjamin Abiel, Brian Abiel and my daughter; Bezer Abiel Atemele. You all strengthened me in ways I had scarcely expected, cheered me up and prayed for me to complete this work. May God grant you more Grace and bless you.

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Operational Definitions

Adolescents: Individuals between the ages of 10 and 19 years old are considered adolescents in this study.

Adolescent Friendly Services: These are peer-led services that are convenient; through flexible opening hours, whilst ensuring privacy, confidentiality and appropriate messaging among others.

HIV Testing Services (HTS): Are the full range of services that are provided together with HIV testing for adolescents aged 10-19 years. This includes pre-test information, HIV testing, post-test counselling including receiving test results.

Utilization: Utilization was defined as receiving HIV testing in the past 12 months and test results. All adolescents who reported having been tested for HIV in the past 12 months prior to the study and received their test results are said to have utilised HTS (UBOS, 2017b).

Stigma: This refers to the negative thoughts within or about an adolescent or group of adolescents based on their age and HIV status.

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Acronyms/ Abbreviations

ART	Anti-Retroviral Therapy
DHIS II	District Health Information System II
DHO	District Health Officer
DHT	District Health Team
HIV/AIDS	Acquired Immuno-Deficiency Syndrome
HTS	HIV Testing Services
KII	Key Informant Interviews
MOH	Ministry of Health
PEPFAR	US Presidents Emergency Plan for AIDS Relief
PLHIV	People Living With HIV
UAC	Uganda AIDS Commission
UACP	Uganda AIDS Control Program
UHAP	Uganda HIV and AIDS Program
UDHS	Uganda Demographic and Health Survey
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations International Children‘s Emergency Fund
WHO	World Health Organisation

ABSTRACT

Introduction: Globally 2,100 adolescents are infected with HIV every day. In Uganda, most adolescents do not know their HIV status. Although generally adolescents know of a place to get tested for HIV, the proportion ever tested remains low at 35.6 % across the country, against the general population HTS access at 83% for women and 70% for men. Utilization of HTS among adolescents aged 10-19 years in Soroti District is very low estimated at 3%; yet adolescents are a priority population to be targeted for HTS. This study therefore, was conducted to determine the factors associated with utilization of HTS among adolescents aged 10-19 in Soroti District.

Methods: This was a community-based Cross-sectional mixed methods study in Soroti district. Interviewer-administered paper-based questionnaires were used adolescents and key informant interview guides were used for interviews with health workers. Quantitative data was analysed using STATA/SE, version 14 software. Univariate analysis was done for description of respondents and to determine the proportion that utilised HTS. Modified Poisson model was used for multivariate analysis to determine associations between independent variables and utilisation of HTS. Qualitative data was analysed manually using content analysis.

Results: A total of 374 adolescents were interviewed; 202 (54.0%) were females, 335 (89.6) were in school. Their mean age was 14.7, with standard deviation of 2.3, only 49 (13.1%) received HIV testing in the past 12 month and test results and 14 (3.7%) were married. At multivariate analysis, belief that HTS were friendly (APR=0.37; CI= 0.15- 0.95) and perceived parents financial support to go for testing (APR=2.06; CI=1.14-3.75), were associated with utilization of HTS. Based on the qualitative findings, the barriers to HTS utilization included; fear of positive results, limited family support, lack of knowledge on HTS, perception of low

risk, poor attitude of health workers, stigma and discrimination and lack of confidentiality in that health workers may disclose their status to the community.

Conclusion and Recommendations: Utilization of HTS among adolescents in Soroti was found to be unacceptably low. Therefore, the MOH and the districts should support adolescents to be meaningfully engaged in the design and delivery of HTS in order to protect them from HIV and address the fear associated with HIV. Also understanding the way, in which age and other situations such as gender and sexuality influence on utilization of HTS, is important to the provision of effective interventions targeting adolescents.

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.0 Introduction

HIV Testing Services (HTS) are widely recognized because of their role in the fight against HIV/AIDS, since they provide contact avenues where information, guidance and referral to medical treatment can be sought. Information, counselling and testing also play a vital role in promoting and reaffirming safer sex practices for persons who test negative (Sawyer et al., 2012). However, the effectiveness of these services depends on their accessibility by individuals. The lack of use of HTS is especially prominent amongst adolescents, yet there is a growing rate of new HIV infections amongst this group. Even though adolescents tend to be aware of HTS, few have accessed these services and know their HIV status. This has consequently hindered the attainment of 90 percent target of individuals living with HIV knowing their status and attainment of 90 percent target of linkage to Care and treatment (UAC, 2015a). Perceptions of both HIV/AIDS and HTS are still affected by stigma and mistrust thus creating barriers to accessing HTS services at individual, interpersonal and community or cultural levels (Idele et al., 2014).

Adolescents are defined as individuals aged 10–19 years. Adolescence is the period when many individuals begin to explore their sexuality; as a result, access to sexual and reproductive health information and services becomes increasingly important. Despite the well-known need for protection from HIV infections and other reproductive health risks, their age and their social and economic status limit adolescent access to information and services in many settings. Adolescence is typically a period of experimentation, new experiences, and vulnerability

(UNICEF, 2013). Whereas recent studies on HIV in Uganda have predominantly focused on the whole country as reported in the Uganda Demographic and Health Surveys, few or none have targeted adolescents including those of the key population who should be prioritized and targeted. Reports available at district level reveal consistently very low utilization of HTS among the adolescents compared to other Districts in East Kyoga (DHO-Soroti, 2017). The utilization of HTS for adolescents in Soroti is estimated at 3% and is lower than the national average of 35.6% 0f adolescents who had ever tested and were given results of their last test (UBOS, 2017b, MOH, 2016b). This low uptake is coupled with limited information to provide reasons for the gap in utilization (DHO-Soroti, 2017, MOH, 2015). Consequently, Soroti district and Uganda as a country are still far from meeting UNAIDS adopted targets of 90 percent of individuals living with HIV knowing their status and 90 percent linkage of identified PLHIV to Care and treatment, whose achievement largely depend on utilization of HTS (UAC, 2015a). This study therefore seeks to assess the factors associated with utilization of HTS among adolescents in Soroti District.

1.1 Background

Globally HIV/AIDS is a major source of concern and constitute a major cause of death and a threat to development. The disease has negative impacts on economic, social and political development of any nation with high infection rate (Jimoh and Balogun, 2010a). Sub-Saharan Africa is the worst affected in the world, with an estimated 23.5 million people living with HIV (Sanga et al., 2015). Across the world, around 2,100 young people and adolescents are infected with HIV every day with approximately four million young people aged 15-24 living with HIV. Of this, 29% are under the age of 19 years (UNAIDS, 2016d). About half of adolescents (10-19 years) living with HIV are in just six countries: South Africa, Nigeria, Kenya, India,

Mozambique and Uganda (UNAIDS, 2016e). To compound this, most recent data indicate that only 11 per cent of adolescents aged 10-19 in sub-Saharan Africa have been tested for HIV in the past (PEPFAR, 2016). Also adolescents account for about 5 per cent of all people living with HIV and about 12 per cent of new adult HIV infections in sub-Saharan Africa (UNAIDS, 2016a).

In Uganda, the estimated national HIV prevalence in adults decreased from 7.3% in 2011 to 6.0% in 2016 (MOH, 2011, MOH, 2017). This decline in HIV prevalence may be due to a decreasing number of new infections in recent years as a result of intensified HIV prevention and treatment services in the country. However among the youth aged 15 – 24 years of age, only 39.5 percent of the males and 38.1 percent of the females have comprehensive knowledge of HIV/AIDS. (MOH, 2015) and only 35.6% of adolescents aged 10-19 years had tested for HIV (UAC/UHAP, 2016). Furthermore in Uganda, the MOH aligned the HTS policy with the new WHO guidelines to streamline HTS for adolescents with targeted testing for those at risk. Although generally adolescents know of a place where they can get tested for HIV, the proportion who reported ever testing remains low at 54% for females and 44% for males in the 15-19 age group; yet, this is a critical step toward access to HIV care and treatment (UBOS, 2017b). Unfortunately, this is not only a missed chance for a well-known entry point to care and treatment, owing to the fact that HIV prevention starts with one knowing their status (UNAIDS, 2016d, Wanyenze et al., 2011).

HIV/AIDS remains the number-one cause of mortality among adolescents in Africa and the second-leading cause of death among adolescents worldwide (UNICEF 2015). This could be as a result of low utilization of available HTS and untimely linkage to care and treatment for adolescent, limited adolescent friendly services, HIV related stigma and discrimination 3

(UNAIDS, 2016d). Also, the number of AIDS-related deaths among adolescents rose by 50% between 2005 and 2012; this is in comparison to a 30 percent fall among people of all ages living with HIV (UNICEF 2013).

Promising signs were shown between the years of 2005 and 2013 as the number of AIDS-related deaths in the country was reported to have decreased by an estimated 19% (UNAIDS, 2016b). Nevertheless, at the end of 2013, Uganda had 140,000 new cases of HIV infections, accounting for 7% of the world‘s total increase – the third largest increase in any country and this occurring mostly among the adolescents (UAC/UHAP, 2016). In 2013, only an estimated 1% of adolescents in Uganda accessed HTS, with a positivity rate of 2.5% (MOH, 2013, MOH, 2016b). Still adolescence is a period characterized with vulnerabilities which increase the risk to HIV infection among this age group (MOH, 2016a). Only 17% of Ugandan Health facilities offered adolescent friendly services. In Uganda adolescent girls are generally at higher risk of acquiring HIV than their male counterparts. The purpose of this study is to explore the utilization of HIV testing services and associated factors among adolescents in Soroti District, in Eastern Uganda.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter includes a literature review of previous studies conducted on factors associated with HIV Testing Services (HTS) among adolescents. The proportion of HIV testing services and factors related to knowledge of HIV testing and counselling including individual, community and health system that are associated with utilization of HIV testing services were reviewed. HTS facilitates early referral for care and support of HIV-infected individuals and is an effective method of preventing infection. Provision of HTS is an entry point to other HIV services and an opportunity for individuals to learn their HIV status, and knowledge about accurate risk perceptions thereby encouraging safer behaviours (UAC, 2015a).

2.1 Proportion of HIV Testing Services Utilization

The provision of HTS is a very significant part of any national HIV prevention programme. It is well known that people living with HIV who are aware of their status are less likely to transmit the infection to others. Studies have reported that HTS plays a vital role in identifying persons infected as well as providing an opportunity for them to benefit from therapeutic interventions (Menna et al., 2015). HTS remain fundamental to accessing HIV treatment and prevention services. Moreover, risk behaviours that are known to fuel HIV transmission are reported more during adolescence and HTS is one sure opportunity to engage and promote healthy sexual practices through counselling and linkage to other health services. Studies have shown that, young people who are labeled as sexually active tend to be exposed to early sex in sub-Saharan Africa before the age of 15 years (Wanyenze et al., 2011, UNESCO, 2013). The MOH and WHO have recommended that benefits of effective and acceptable HTS options among this group

should be emphasised in-order to accelerate epidemic control among adolescents for communities to achieve the embraced global targets (WHO, 2017, MOH, 2016b). The WHO realizing the vulnerability of the adolescents to HIV infection developed specific HTS guidelines for adolescents (WHO, 2013, UNAIDS, 2016c). The guidelines emphasized the importance of establishing comparative effective interventions to improve access to HTS for adolescents, targeting especially those from the key population; those living on the streets, orphans, in child headed households, girls engaged in sex with older men or in multiple or concurrent sexual partnerships, adolescents who are sexually exploited (MOH, 2016b, WHO, 2017) (Govindasamy et al., 2015b).

According to Yawson, Dako-gyeke, Addo, & Dornoo, (2014) HTS uptake among adolescents varies by sex. The study reported that more females in Southern African countries were utilizing HTS than males compared to countries such as Ethiopia, Nigeria, Tanzania, and Zambia where male utilization of HTS was higher than females. They found the high level of 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., 2014).

Despite campaigns to encourage testing and the accompanied benefits of HTS, few adolescents in sub-Saharan Africa have been reported to have ever tested for HIV using the HTS, although there is reported high levels of willingness to test (Macphail et al., 2015). Not much is known about the predictors of HTS utilization among the adolescents in sub-Saharan Africa. But predictors such as; knowledge of HIV, knowing a source of HTS, perceived risk and having discussed condom use for HIV prevention were cited among Nigerian youth (Macphail et al., 2015, Wanyenze et al., 2011).

According to Jimoh & Balogun, on factors hindering acceptance of HIV/AIDS voluntary counselling and testing among youth and adolescents in Kwara state, Nigeria, adolescents are the most vulnerable population to HIV and other Sexually Transmitted Diseases. He reported that in many countries, 60percent of all HIV incidences are among the age group 10-24 years. The study also reported that the level of awareness of HIV/AIDS among adolescents in Nigeria remains low and stressed the need to change their attitudes regarding HTS (Jimoh and Balogun, 2010b).

2.2 Factors Associated with Utilization of HIV Testing Services among adolescents

2.2.1 Individual Factors

A study conducted by Kaai, Bullock, Burchell, & Major (2012) on factors that affect HIV testing and counselling services among heterosexuals in Canada and the United Kingdom found age to be the most frequently mentioned socio-demographic factor associated with HTS. The study further indicated that there was a difference in the direction of the association. They found out that HTS was more likely if respondents were younger than 40 years in Canada, while in the United Kingdom it was found that respondents who were younger than 25 years were less likely to have been tested for HIV. The study indicated that the difference could have been due to the varying samples that were studied. They identified the first group of studies that sampled younger populations compared to the last three studies that focused on older populations (Kaai et al., 2012).

In both situations however, the results suggested that the highest testing rates were among the middle-aged study participants and lower among the young and older populations. Other demographic factors such as ethnicity, residing or living in a city of over one million people, having low income, being a female and being more educated were found to have influenced the

heterosexuals in getting tested for HIV (Kaai et al., 2011). They found three studies that cited marital status as a factor associated with HTS. According to the review study, two of the studies that found association between marital status and HTS reported that unmarried people were more likely to be tested for HIV compared to those who were married or those cohabitating. The findings of this review were however, found to be different from Johns et al findings on similar reviews. The study then gave a plausible explanation that the sample in Kaai‘ and his colleagues study were older immigrants from East Africa (mean age of 35.7 years), who were more likely to be married compared to the other two Canadian studies which had participants who were mainly younger and single (Kaai et al., 2012).

Addis and others examined knowledge, attitude and practice towards voluntary counselling and testing among university students in Northwest Ethiopia and found association between higher educational status, being employed and having better income and uptake of HIV testing. The study also found an important association between religion and HTS utilization among men living in urban areas, citing Muslims as being less likely to be tested for HIV. The study attempted to explain that the religious association could be as a result of higher adherence to religious beliefs, which may give protection against the sexual transmission of HIV. The study cited for example that in Islam, though polygamy is accepted for men and divorce is somehow easy, prohibitions against extramarital sex may supersede the susceptibility posed by the former two. Islam also prohibits consumption of alcohol and alcohol is associated with higher likelihood of engaging in risky sexual behaviour, reported, the study. Other explanation for this association of religion and HTS was that all Muslims are circumcised, and circumcision has been identified as a practice decreasing HIV transmission. The study explained it is likely that Muslim men have

a lower self-perceived risk of HIV and thus are less motivated to be tested for HIV (Addis et al., 2013).

Studies have reported demographic factors such as education, gender, age, poverty, and location under one umbrella, social economic status as influencing HTS behaviour. Gender has also been found to be significantly associated with HIV testing behaviour. Meanwhile, other studies found that persons who test late for HIV were more likely to be between ages 18 to 29 as compared to their older counterparts. Poverty was also found to be associated with HIV testing and counselling just as it has been shown in health seeking behavioural studies (Jimoh and Balogun, 2010b) . Many other literature have shown that those with higher education were more likely to report having tested for HIV as compared to the less educated. (Kalanzi, 2013) revealed that 63 percent of those with some college education had tested for HIV, compared to 47 percent of those with a high school education having tested for HIV. This was attributed to the potential of education to empower individuals with more financial ability to access testing services and knowledge regarding the importance of disease prevention and control. The findings of the same study also revealed that university students were more likely to have tested as compared to participants from the general population. The study found 62% of the university students saying they had tested for HIV compared to 49 percent from the general public that had tested for HIV (Kalanzi, 2013). The UNAIDS Gaps report 2014 reveals that Low levels of education and HIV knowledge or risk perception are associated with low utilization of HTS. Adolescents with less formal education and/or less sex education may be less familiar with what constitute HTS. Adolescents with internalized stigma experience more social isolation and are less able to ask trusted adults for support in decision-making. Adolescents who have experienced poor mental

health, violence or low levels of social support may have lower levels of self-efficacy for health-seeking (UNAIDS, 2016d).

Again, Kalanzi, (2013) found that urban settlers were more likely to have tested (60%) compared to 46 percent rural settlers. The association between geographical location and testing for HIV was again found to be highly significant by the study. The study however, attributed the association to accessibility in terms of proximity to testing facilities just as health seeking behavioural studies have reported. It was reported in the study that although the percentage of females (58%) that tested slightly superseded that of males (54%), results of HIV testing across gender needed to be contextualised to understand their association to HIV testing. All these studies did not examine demographic factors that affect utilization of HTS among adolescent aged 10 - 19 years.

Another study on factors that affect HIV Testing Services and testing among heterosexuals in Canada and the United Kingdom, reported that several personal-related factors were found to be associated with HTS. The study categorized these factors into six broad categories as follows: risk perception, illness or having HIV symptoms, fear of HIV-related stigma and other fears, level of HTS education, mandatory or partner recommended HTS, and culture. The study found risk perception as the most commonly cited personal-related factor playing the roles of both a facilitator and barrier of HTS. This was reported to have been cited in 70 percent of 77 studies reviewed during their study (Kaai et al., 2012). They also found perceived risk as the strongest predictor of HTS using the model of health care utilization. According to (Strauss et al., 2015c) at the level of the individual, one fundamental finding that influences utilisation of HTS is the importance of knowledge about testing and HIV. The study further explained that lack of knowledge can be an important barrier to HIV testing status. The potential of young person‘s

behaviour affecting their belief and intention to test for HIV was also carefully established in the study. They added that people who perceived themselves as high risk because of unhealthy sexual behaviours and suspecting that they may be positive were likely to undertake HIV test. Again, the study explained that students who have never engaged in sexual activity and hence believe they are not infected by HIV are less likely to take HIV test. The study also finds history of frequent HTS as well as frequent visit to health facility among the youth as predictors of continuity to HIV testing (Strauss et al., 2015c).

2.2.2 Community Factors

Communities have been known to shape behavior of both individuals and how institutions operate. HIV-related stigma and discrimination have been significant barriers to uptake of HTS and they have majorly been perpetuated with in the communities‘ individuals hail from (Strauss et al., 2015a). Studies have shown that adolescents often feel threatened HIV-related stigma from friends, family and the community. This perceived lack of support has also been found increase the fear of receiving a positive result (Strauss et al., 2015b, Bandason et al., 2013, Musumari et al., 2016a). This fear of stigma, which results from individuals‘ perceptions about the lack of support networks from family, society and the healthcare system, creates a number of other barriers to testing, which may not exist if perceived stigma and discrimination were diminished.

Contrary to the negative structuring that fosters stigma and discrimination, adolescents frequently require to benefit from structures with communities that provide social support to influence their health seeking behaviour, and may often prioritize food, shelter and money over health if not support (Russell et al, 2011). Also more Linkage to educational and social support interventions are an important part of developmentally appropriate response to adolescents, and while not directly linked to HIV programme activities educational and vocational interventions

may be critical enablers for HIV Testing Services programme success in this age group (UNAIDS/WHO, 2013).

2.2.3 Health System Factors

A qualitative study reported that the philosophy of health promotion and preventive medicine regarding HIV Testing Services are not well comprehensible in most African communities. Thus, the latter only assess health services when there is a specific health concern that is perceived to be serious (Kaai et al., 2012). Koblin and others reveal that adolescence is marked by high rates of attrition along the continuum of HIV prevention, diagnosis and treatment services. Adolescents especially those of the key population are less likely to seek HTS although HIV testing for them is recommended after every 3 months (MOH, 2016b), and coverage of adolescent friendly services is low. While data are limited for adolescents, limited evidence from young people studies shows that adolescents experience poor access to condoms and HIV testing, may present later for HIV treatment and have lower rates of adherence, viral suppression and retention in care. Reasons for poor utilization can be categorized as individual-level, health-system-level or structural-level barriers, and are common to all adolescents (UNIADS, 2016) (Govindasamy et al., 2015a).

Concerns regarding confidentiality were also linked to stigmatization. Direct trust relating to health workers providing HTS services was significant determinant of utilisation of HTS. Also, the challenge of travel hours, long queues and limited opening hours of health facilities especially affects students‘ ability to access HTS services because students may have to miss classes in order to undergo the test. The cost of HTS was found to be significant determinant of HIV testing especially among students. The study revealed that offering HTS free of charge as

well as conducting mobile HTS services significantly facilitates young people‘s demand for HIV testing (Strauss et al., 2015c).

Perhaps the most significant barrier to health-seeking among adolescent is the experience of stigma, discrimination or victimization at the hands of health care providers (HCP) and services structure. Concerns about privacy and confidentiality are an important barrier to HTS (Govindasamy et al., 2015a). In addition to concerns about poor attitudes, HCP may not have sufficient skill, competence or training to deal with the specific health and social needs of adolescents (UNAIDS/WHO, 2013). Negative experiences with providers may prompt adolescent to seek similar services from non-conventional service providers (PEPFAR, 2016). In many cases, services for adolescents may not be sufficiently ―adolescent-friendly.‖ Providers may not have an appreciation for the specific health and communication needs of adolescent. Adolescent may experience discomfort when seeking care with adults (Sawyer et al, 2012).

HTS remain fundamental in accessing HIV treatment and prevention services. Moreover, risk behaviours that are known to fuel HIV transmission are reported more during adolescence and HTS is one sure opportunity to engage and promote healthy sexual practices through counselling and linkage to other health services. Studies have shown that, young people who are labeled as sexually active tend to be exposed to early sex in sub-Saharan Africa before the age of 15 years and the need to highlight the benefits of effective and acceptable HTS options among this group. The WHO and Uganda MOH realizing the vulnerability of the adolescents to HIV infection developed specific HTS guidelines for adolescents. These policy guidelines highlight the importance to establish comparative effective interventions including; adolescent friendly services, service provision by adolescent peers to improve access to HTS for adolescents from key populations and vulnerable adolescents who are especially at higher risk for HIV infection.

Also these guidelines recommend that adolescents of the key populations should be provided with opportunity to test every 3 months (WHO, 2017, MOH, 2016b, Govindasamy et al., 2015a). However all the studies reviewed here did not focus on adolescents aged 10-19 years. This study therefore sought to assess factors associated with utilisation of HTS among adolescents in Soroti District.

CHAPTER THREE

3.1 Statement of the Problem

Access to HTS is a cornerstone to the strategic framework adopted by Uganda government for HIV control. In Soroti district, only 3% of adolescents aged 10-19 years utilise HTS compared to the national average of 35.6% (DHO-Soroti, 2017, MOH, 2015). Limited information is available to explain reasons for low utilization of HTS among adolescent in Soroti district (UDHS 2016) (UAC, 2015b). Studies show that adolescents‘ utilization of HTS enables them to learn about their sero-status and gain knowledge on avoiding risky behaviour (Idele et al., 2014)

Uganda government and Soroti District have implemented various interventions to achieve the nationally adopted UNAIDS 90-90-90 targets by 2020 (MOH, 2016a). In spite of free HTS, utilization among adolescents has remained low (MOH, 2016a). This could lead to missed opportunity, late diagnosis and ineffective management of HIV and associated illnesses (UBOS, 2016, Wanyenze et al., 2011). Yet, the HIV epidemic continues to disproportionately affect adolescents with prevalence estimated at 4.2% for girls and 2.4% for boys (UAC/UHAP, 2016).

Low utilization of HTS among adolescents could deter the implementation of proven combination interventions to fast tracking HIV response and the realization of global goals. Some studies have shown that even when HTS are available, they are not utilized optimally which indicates that there are other factors apart from availability that influence utilization of HTS (MOH-UGANDA, 2015, UNESCO, 2013). This study therefore was conducted to establish factors associated with utilization of HTS among adolescents in the Soroti District to inform improvement in service uptake.

3.2 Justification of the Study

This study will provide information regarding utilization of HTS among adolescents in Soroti District. This information is expected to enable district health service leaders, their collaborating agencies and policy makers to design adolescent friendly strategies that will help improve the utilization of HTS among the adolescents. Relatedly, study results will feed into the future national HIV control framework that will be developed. The results of this study will also serve as a baseline for more vigorous research in the future regarding the gap between knowledge, attitudes and the utilization of HTS. Similarly, the adolescents who are diagnosed with HIV early enough through HTS may receive early treatment and care that will improve their quality of life and consequently increase their productivity.

3.3 Conceptual Framework

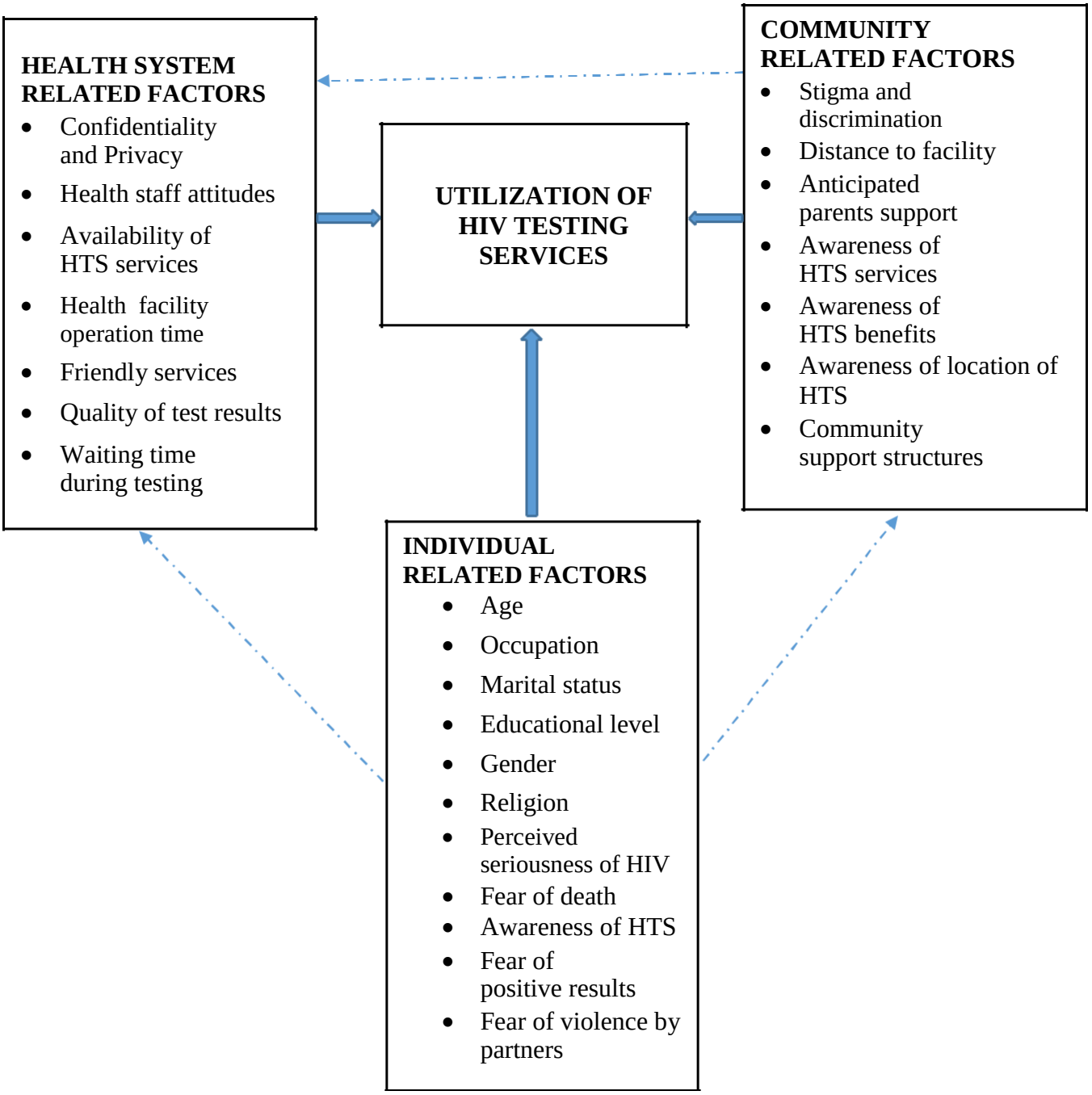

Figure 1: Conceptual frame work showing relationship between utilisation of HTS and associated factors. Framework adapted from Andersen's Behavioural Model (Andersen and RM., 1995.)

Conceptual Framework Narrative

The conceptual framework adapted from (Andersen, 1995) highlights the individual factors, community factors and health system related factors that affect utilization of HTS among the adolescents. The community factors such as stigma and discrimination, community support structures and culture could negatively or positively influence utilization of HTS. Utilization of HTS may also be influenced by Health System related factors like confidentiality and privacy, health staff attitudes, availability of HTS services, health facility operation time, trust in the health system, waiting time during testing, quality of test results and availability of HTS and the adolescent individual characteristics like education level, sex, age, employment status and perceived seriousness of HIV, marital status among other could affect utilization of HTS. This level of utilization will characteristically affect HIV/AIDS morbidity and mortality among adolescents.

CHAPTER FOUR

4.0 Research Question

4.1.0 General Research Question

What are the factors associated with utilization of HIV testing services among adolescents in Soroti District?

4.1.1 Specific Research Questions

1. What is the level of utilisation of HIV Testing Services among adolescents in Soroti District?

2. What are the factors that influence utilisation of HIV Testing Services among adolescents in Soroti District?

3. What are the barriers to utilisation of HIV Testing Services among adolescents in Soroti District?

4.2 Study Objectives

4.2.0 General Objective

To assess the factors associated with utilisation of HIV Testing Services (HTS) among adolescence in Soroti District.

4.2.1 Specific Objectives

1. To determine the level of utilisation of HIV Testing Services (HTS) among adolescents in Soroti District

2. To assess the factors associated with utilisation of HIV Testing Services (HTS) among adolescents in Soroti District

3. To explore barriers to utilisation of HIV Testing Services (HTS) among adolescents in Soroti District

CHAPTER FIVE

5.0 METHODOLOGY

5.1 Study area

The study was conducted in Soroti District. Soroti is in Eastern Uganda and is bordered by the Districts of Kaberemaido in the Northwest, Amuria in the North, Katakwi in the East, Serere in the West and Ngora in the South. The indigenous tribes are the Iteso and Kumam. Administratively, Soroti District has 10 sub counties (7 of which are found in the rural parts and 3 urban municipal Divisions), 50 parishes (37 rural parishes and 13 wards) and 387 villages (309 rural villages and 78 cells). The District has a total population of 326,300 (UBOS, 2017a). Adolescents 10-19 years are 86,430 (UBOS, 2017a). In terms of HTS delivery, both government and NGOs provide HTS at static and outreach clinics. However, there are no specialised clinics with services tailored specifically to adolescents in Soroti District. The District has 1 Regional referral hospital, 2 Health centres IVs, 12 HC IIIs and 14 HC IIs with a total of 5,018 trained VHTs (DHO-Soroti, 2017).

5.2 Study Population

The target population of this study was adolescents (10-19 years) who reported to have lived in Soroti District for at least the past six months prior to the date of data collection.

5.2.1 Study units

The households constituted a sampling frame from which eligible study units were selected.

5.2.2 Inclusion criteria

Adolescents aged 10 to 19 years and resident in Soroti District for at least six months prior to the date of data collection were included in the study. These participants would have most likely gotten the opportunity to utilise HTS services.

5.2.3 Exclusion criteria

Adolescents who were severely ill or mentally incapacitated were excluded from this study.

5.3 Study design

A cross sectional community-based mixed methods study design was used. The study was predominantly quantitative, however qualitative method was additionally used to collect data on barriers of HTS utilisation since this method was best suited for objective three of the study.

5.4 Sampling Size determination

The sample size of study participants was determined from the Leslie Kish formula (Leslie, 1965)

$$\text{Sample size} = \frac{Z^2pq}{e^2}$$

Where Z = 1.96, P is 32% which was the proportion of adolescents estimated to be utilizing HTS according to a previous study done in Kampala (Nyabigambo et al., 2014). This estimated proportion of HTS utilisation was considered because the 3% level of utilisation in Soroti District was calculated from routine reports whose data may have not been scientifically collected (DHO-Soroti, 2017). q=68%, however the maximum error the researcher was willing to consider was 5%

$$= \frac{1.96*1.96*0.32*0.68}{0.05*0.05}$$

$$= 335$$

$$\frac{335}{1-0.1} = 373$$

With the 10% none-response rate the total sample size was 373 study participants.

5.5 Sampling procedure and selection criteria

5.5.1 Community households.

A list of 10 sub counties and villages per sub-county was obtained from the district-planning unit. One out of seven rural sub counties and one municipal division out of three were purposively selected because they both had facilities with adolescent clinics. This mix was to cater for both rural and urban context. The study sample size of 374 was distributed equally among the two sub counties. Four villages from each of the two selected Sub Counties were selected by simple random sampling. Households with adolescents aged 10-19 years were identified and registered with the help of LC1 and VHTs of the selected 8 villages.

To determine the number of adolescents to be selected in each sampled village, Probability Proportionate to size (PPS) of the village was used. The total number of households with adolescents in a village was divided by the total number of households with adolescents in all the selected four villages of the sub county and multiplied by the total number of the required respondents per Sub County (187). The required number of households selected in each sampled village became the study units for that village. Systematic sampling was used to select the household for the study with the sampling interval for that respective village. If there were more

than one eligible adolescent in a household, simple random sampling by use of random number tables was done to select one adolescent.

The sampling interval was obtained by dividing the total number of households per village with the expected number of respondents for that village. The first household for each village was selected by simple random sampling using computer sampling software. Basing on the sampling frame interval per village, a systematic sampling was used for subsequent households until the required sample for each village is achieved.

Table 1: Showing distribution of proportion to village size

Katine Sub county (Rural)		**Western Division (Urban)**	
Village	**Proportion to village size**	**Village**	**Proportion to village size**
Olwelai	61	Majenga	51
Agora	44	Lubiri	39
Adamasiko	53	Wire Cell	45
Obochei	29	Pamba	52
Total	**187**	**Total**	**187**

5.5.2 Key informant interviews

The study conducted 5 Key informant interviews purposively with in charges of HC IIIs, HTS clinic in charges of two sub counties and the District HIV/AIDS focal person because of their experience and position in the provision of HTS.

5.6 Data Collection and tools

The data collection exercise took place from May to July 2018. During this period, the study participants who were in schools for the holiday classes were targeted on weekends when they had returned home.

5.6.1 Quantitative data

Quantitative data was collected using interviewer-administered paper-based questionnaires, which were pre-coded and designed as closed ended standard questions based on the objective one and two of the study. The questionnaires were translated into the local language (Kumam and Ateso) and back translated into English by people without prior knowledge of the instrument. This catered for adolescents who were not conversant with the English language. The back translation helped in checking whether the original meaning of the questions in the instrument was maintained when the questionnaire was administered in the local language. Trained Research Assistants administered questionnaires to these adolescents. The questionnaire collected factors associated with utilization of HTS and these included; individual related factors; age, occupation, marital status, educational level, Gender, religion, perceived seriousness of HIV, awareness of HTS, fear of positive results among others: Health systems factors; confidentiality, health staff attitudes, availability of HTS services, friendly services, waiting time during testing among others and community related factors; stigmatization and discrimination, distance to facility, Anticipated parents support, awareness of HTS services, awareness of benefits of HTS, awareness of location of HTS, community support structures among others. The interviews were preceded with an introduction to the purpose of the study to build rapport with the respondents.

5.6.2 Qualitative data

Qualitative data was collected using Key Informants (KI) interview guide. The KII were conducted with health workers who were purposively selected (They included In-charge HTS clinic, In-charge of HCIII at the sub counties and HIV focal person at the District). The interviews explored health workers perceptions of barriers of utilisation of HTS among

adolescents. The KII were audio recorded by the interviewer (principal investigator) in addition to note taking. The interviews explored health workers perception and experiences on the barriers of utilisation of HTS among adolescents. Five key informants‘ interviews were conducted, and each interview lasted between 30 to 45 minutes.

5.7 Quality control

5.7.1 Training of research assistants

To ensure a quality study, five Research Assistants fluent in Ateso and Kumam were trained for two days and equipped with various interpersonal and interviewing skills like probing and proper information recording. All efforts were made to ensure that they understood the study objectives and methodology.

5.7.2 Pre-testing

The paper-based questionnaires and other tools were pre-tested among adolescents from 38 households (about 10% of the total households to be studied) in one of the villages that were not included in the study, and adjustments were made to the questions where necessary. Duration used to complete a questionnaire was noted and used to plan the time during the respondent interview. Pre-testing of the tools addressed validity, relevance, comprehensiveness and degree of robustness of the interview tools.

5.7.3 Supervision

The Principal Investigator worked closely with the Research Assistants throughout the data collection period to make sure that the interviews were done appropriately and comprehensively.

5.7.4 Field editing of data

During the study, field editing of data was done by the Principal Investigator at the end of each day; checking with the Research Assistants to ensure completeness, accuracy and consistency was systematically maintained. This helped to standardize the quality of data collected. Missing and incorrect information in the questionnaires was immediately rectified.

5.8 Measurements

5.*8*.1 Dependent Variables

The dependent variable in this study was utilisation of HTS. Utilization was defined as receiving HIV testing in the past 12 months and test results. The proportion of adolescents who reported to have been tested for HIV in the past 12 months and received their results were said to have utilised HTS.

5.*8*.2 Independent Variables

The independent variables included; confidentiality, and availability of adolescent friendly services, stigma and discrimination including adolescent characteristics such as age, gender, marital status, and occupation among others. These variables were categorized into health system, individual related factors and community related factors.

Health system related: These included; confidentiality and privacy, health staff attitudes, availability of HTS services, health facility operation time, adolescent friendly services, trust in the health system, quality of test results, and waiting time during testing among others.

Individual adolescent factors: These included; age, occupation, Knowledge, marital status, educational level, gender, religion, perceived seriousness of HIV, fear of death, awareness of HTS, anxiety regarding positive results, fear of violence by partners among others.

5.8.3 Measurement of knowledge

Knowledge was assessed by questions focusing on HTS; benefits of HIV testing, sign and symptoms, testing place, mode of transmission, treatment and care. Each response was scored as _yes‘ or _no‘ where yes was scored as _1‘ and no was scored _0‘. The scoring range of the questions was 6 (maximum) to 0 (minimum). A cut off level of ≤ 3 was considered as inadequate whereas >3 were considered as adequate knowledge about HTS. Knowledge scores for individuals were calculated and summed up to give the total knowledge score that was used for analysis.

Community related factors: These included stigmatization and discrimination, distance to facility, culture, awareness of HTS services, community support structures knowledge among others will be qualitatively collected through KII.

5.8.4 Measurement of stigma and discrimination

Anticipated stigma was measured by assessing the reasons that made them hesitate to take an HIV test; scared of positive results, fear being gossiped about, afraid of stigmatization, afraid other people will know. If they hesitate to get tested for HIV because of fears or anticipated how other people (for example, friends, family, or community) would respond if they tested for HIV, then they were considered to be stigmatized (STRIVE, 2012). Each response was recorded as _yes‘ or _no‘ where _yes‘ scored 1 and no 0 was. The scoring range of questions was 4 (maximum) and to 0 (minimum). A cut off of ≤ 1 was considered as not stigmatized whereas ≥ 4 was considered stigmatized. Stigma and discrimination scores of individuals were calculated and summed up to give a total stigma and discrimination score.

Table 2: Showing measurement of variables under study

No	Variable	How variables were measured
1	Utilization of HTS	Interviewer-administered paper-based questionnaires with adolescents
2	**Institutional factors**	
	Confidentiality	Semi structured paper based questionnaire with adolescents, KII with health workers
	Supplies, staffing and knowledge	Key Informant interviews with health personnel
	Health worker‘s attitudes	Key Informant Interviews with health workers Semi structured paper based questionnaire with adolescents, KII with health workers
3	**Individual Related Factors**	
	Adolescent demographics for instance; Respondent‘s Age, Religion, Level of education, Marital status	Interviewer-administered paper-based questionnaires with adolescents
	Knowledge of HTS	Aggregated score from Semi structured paper based questionnaire with adolescents
	Fear of positive results	Interviewer-administered paper-based questionnaires with adolescents, KII with health workers
4	**Community Related Factors**	
	Stigmatization and discrimination, Awareness of HTS services Awareness of benefits of HTS, Awareness of location of HTS	Interviewer-administered paper-based questionnaires with adolescents, KII with adolescents Interviewer-administered paper-based questionnaires with adolescents

5.9.0 Data Management and Analysis

5.9.1 Data management

All quantitative data was edited, coded and entered in the computer. Data was entered and also cleaned using Epi-data version 3.02 before exporting to STATA 14 for analysis. Quantitative data was checked for consistency and coding to clearly identify the variables required for data analysis. Accuracy of the data entered was checked by cross-checking the printout of a data set with a random number of questionnaires picked from the 374 questionnaires. Qualitative data was; collected using audio recorders, data was transcribed and transcripts were saved in a protected format. Two peer researchers read through the transcripts to ensure consistency of information hence validating the data in the transcripts.

5.9.2 Data analysis

Qualitative data from the key informants was analyzed manually using content analysis to objectively determine the presence of common key words, themes, characters, phrases or concepts. The audio recordings of key informant interviews were transcribed and these transcripts were the basis of content analysis. The transcripts were read several times to get clear understanding of emerging issues and these were coded. The similar codes were grouped together into categories and later the themes were generated from the categories. The quotes that represented the codes from particular themes were cited in the results. This data was used to supplement quantitative data and helped to explain more the health system factors associated with utilisation of HTS,

Quantitative analysis was done using STATA/SE version 14.0. Utilization of HTS was measured as the proportion of adolescents who reported to have tested for HIV and received their results.

Descriptive characteristics of the level of utilization of HTS amongst the study population were presented using percentages for categorical data and median and inter-quartile range for continuous data. Frequency tabulations were preferred to describe the characteristics of adolescents included in this study. To establish the factors associated with utilisation of HTS, modified poison model was used. Bivariate and multivariable analyses were employed to generate the crude Prevalence Ratio (CPR) and adjusted Prevalence Ratio (Adjusted PR) respectively.

Multivariate analysis

During multivariable analysis, a hierarchical modeling technique was used to allow more distal factors like community related variables to be appropriately examined without interference from the more proximate factors like individual related variables. A three-stage model was used by following the framework described by Andersen‘s Behavioural Model, (1995).

Firstly, all community factors; stigma and discrimination, distance to facility, parents‘ financial support, awareness of HTS services, awareness of benefits of HTS, awareness of location of HTS, community support structures among others were entered in the baseline model to assess their relationship with utilisation of HTS. A manually processed stepwise-backwards elimination was performed and variables with p values <0.05 were retained in the model. The factors which were not significant ($p \geq 0.05$) were recorded as crude information (CPR, CI and p values) in their categorization.

Secondly, all the health system factors; confidentiality and Privacy, health staff attitudes, availability of HTS services, health facility operation time, friendly services, quality of test results, waiting time during testing were examined with the community related factors that would

show significant association with utilisation of HTS and those variables with p values <0.05 were retained.

In the third stage, individual related factors were investigated with the community and health system related factors that were significantly related with the outcome (utilisation of HTS). The factors which were not significant (p≥0.05) were recorded as crude information (CPR, CI and p values) in their categorization. Only those variables with p values <0.05 were retained. The outputs in the final model which included; sex age religion knowledge parents anticipated financial support, perceived local leaders support, availability of HTS for adolescents and friendly services, were recorded as adjusted information (APR, CI and p values) in the respective categorization of factors. In the final model checks for co-linearity were considered to reduce any statistical bias.

5.10 Ethical considerations

Ethical clearance to conduct the study was obtained from Makerere University School of Public Health Higher Degrees Research Committee (HDREC). Permission to conduct the study was sought from the Chief Administrative Officer of Soroti District Local government. Introductory letters were obtained from the District Health Officer of Soroti District before interviewing the adolescents at the community level. Participants could withdraw from the study any time. Written consent was obtained from the study participants 18 years and older, and for those below 18 years, consent was sought from their respective parents/guardians. Adolescents below the age of 18years whose parents were not available to provide consents were not interviewed; they were replaced by subsequent eligible participants. All respondents including those below 18 years who provided assent were informed of; the purpose of the study, the unconditional requirements to participate in the study and their right to withdraw consent at any time during the study.

Parents/guardians were not present during the interviews. The respondents were told the benefits of the study and assured of no foreseeable risks during and after the study. The information gathered was kept confidential and transcripts for qualitative and filled questionnaires were kept secure by the Principal investigator and only accessed by Principal investigator. The study participants were given identification numbers for anonymity so that they were not easily identified by anybody who was not involved in the study and to create confidence and freedom as they answered questions.

5.10.1 Plan for utilization and dissemination of results

The results of this study will be submitted as a dissertation in partial fulfillment of the requirement of award of master‘s degree in Health Services Research of Makerere University. The findings of the study also, will be disseminated to post graduate studies of Makerere University. The copies of the report will be submitted to Makerere University School of Public Health and DHO‘s office in Soroti District. The study will also be published in a peer reviewed scientific journal.

CHAPTER SIX

6.0 RESULTS

6.1.0 Characteristics of Adolescents

A total of 394 adolescents were approached to participate in this study; 11 of those approached were not included for interviews because their parents were not available to provide consent and 9 adolescents above the age of 18 declined to participate after consenting for reasons they did not disclose and 374 adolescents agreed to participate in the study and were interviewed. Their mean age was 14.7 with standard deviation of 2.3 and the median age of 15 with inter-quartile range of 13-16. Two hundred and two (54.0%) were females, 165 (44.1%) were Catholics, 132 (35.3%) were Protestants. Almost all participants 360 (96.3%) were not married and only 14 (3.7%) were married. Meanwhile those in school were 335 (89.6%), and 7 (1.9%) were employed. More than half 200 (53.5%) of the participants were Iteso, 36.90% Kumam were and 9.63% represented other tribes as shown in table 1.

Table 3: Showing Characteristics of Adolescents (N=374)

Characteristic	Number(n)	Percentage (%)
Sex		
Male	172	46.0
Female	202	54.0
Age		
10-14	170	45.5
15-19	204	54.5
Level of Education		
None	14	3.8
Primary	224	60.1
Secondary/Tertiary	134	36.5
Religion		
Catholic	165	44.1
Protestant	132	35.3
Pentecostal	68	19.2
Muslim/Others	9	2.4
Marital Status		
Single	360	96.3
Married	14	3.74
Employment Status		
Un-employed	32	8.6
Student	335	89.6
Formal/Self-employed	7	1.9
Tribe		
Iteso	200	53.5
Kumam	138	36.9
Others	36	9.6

6.1.1 Level of Utilization of HTS among Adolescents

Out of 374 adolescents in the study, only 49 (13.1%) had tested for HIV in the past 12 months and received their results.

6.1.2 Attitude of adolescents on HTS

Among 374 participants, 344 (92.0%) would be willing to use HTS if made available to them and 303 (81.0%) reported their parents would consent for them to receive HTS. One hundred fifty one (40.4%) of participants reported their parents would give financial support to go for HTS. Two hundred and nineteen (58.6%) felt that their peers were supportive of them going for

HTS, 216 (57.8%) felt their local leaders would support them to receive HTS and 269 (71.9%) believed that the HIV testing services were friendly as shown in Fig 2.

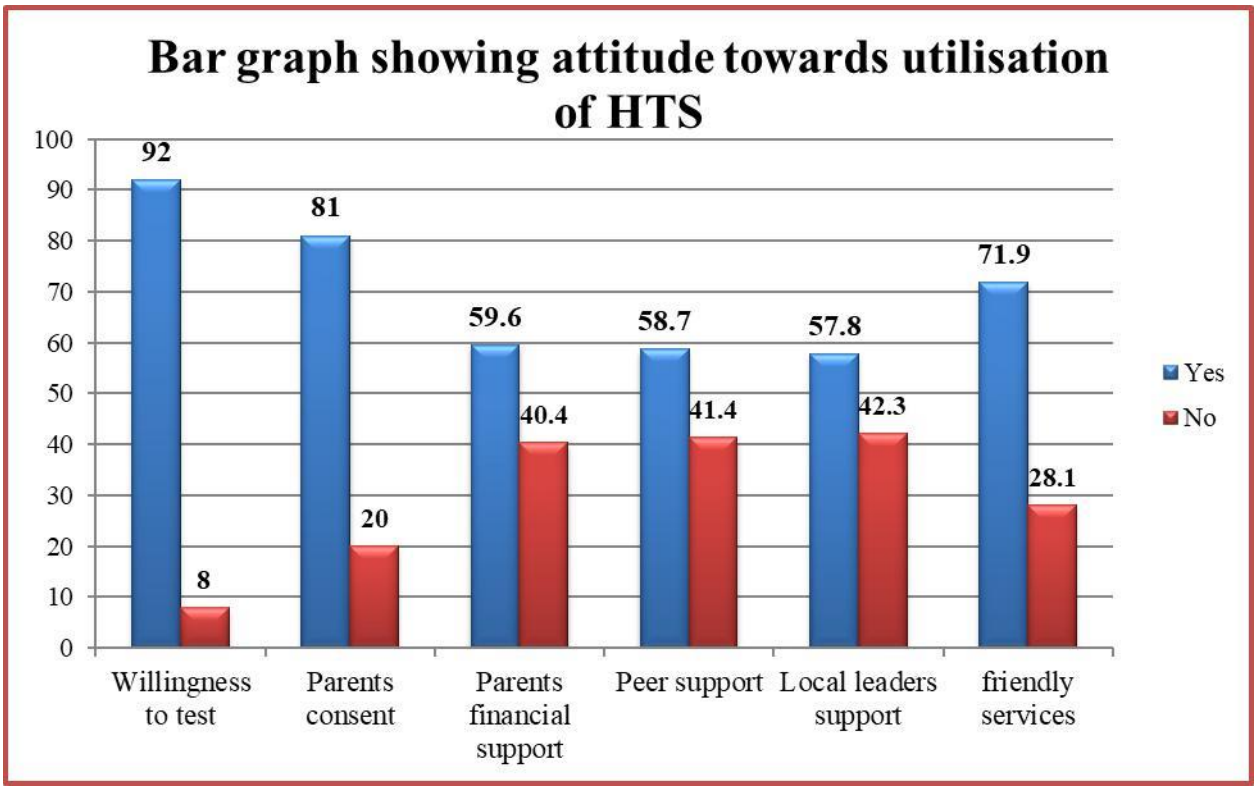

Figure 2: Bar graph showing adolescents attitude towards HTS

6.2.0 Bivariate analysis of factors associated with utilization of HTS

In the bivariate analysis, only perception that services were friendly was a statistically significant factor at 95% CI. Adolescents were less likely to utilize HIV testing services if they perceived services were not friendly (CPR= 0.36; CI= 0.16-0.82). On the other hand; sex, age, education level, religion, marital status, employment status, tribe, being knowledgeable on HTS, parents' financial support, and local leaders support were not statistically significant at bivariate level as shown in table 2.

Table 4: Bivariate results showing factors associated with Utilisation of HTS among adolescents (N=374)

Adolescent Characteristic	Utilization		Crude PR (95% CI)	P-Value
	Yes (%)	No (%)		
Sex				
Male	24(13.95)	148(86.05)	1	
Female	25(12.38)	177(87.62)	0.89(0.53-1.50)	0.65
Age				
11-14	19(11.18)	151(88.82)	1	
15-19	30(14.71)	174(85.29)	1.32(0.77-2.25)	0.32
Education Level				
Primary and below	31(12.97)	208(87.03)	1	
Secondary and above	18(13.33)	117(86.67)	1.03(0.60-1.77)	0.92
Religion				
Catholic	25(15.15)	140(84.85)	1	
Protestant	12(9.09)	120(90.91)	0.60(0.31-1.15)	0.12
Pentecostal/Muslim/Others	12(15.58)	65(84.42)	1.03(0.56-1.94)	0.93
Marital status				
Single	47(13.06)	313(86.94)	1	
Married	2(14.29)	12(85.71)	1.09(0.29-4.06)	0.89
Employment status				
Un-employed	5(15.63)	27(84.38)	1	
Student	43(12.84)	292(87.16)	0.82(0.35-1.93)	0.65
Formal/Self-employed	1(14.29)	6(85.71)	0.91(0.12-6.67)	0.93
Tribe				
Iteso	26(13.00)	174(87.00)	1	
Kumam	19(13.77)	119(86.23)	1.06(0.61-1.84)	0.84
Others	4(11.11)	32(88.89)	0.85(0.32-2.31)	0.76
Knowledge on HTS				
Inadequate knowledge	1(2.56)	38(97.44)	1	
Adequate Knowledge	48(14.33)	287(85.67)	5.59(0.79-39.47)	0.08
Community Factors				
Parents financial support				
Yes	38(12.54)	265 (87.46)	1	
No	11(15.19)	60(84.51)	0.55(0.66-2.29)	0.50
Local leaders support				
Yes	33(15.28)	183(84.72)	1	
No	16(10.13)	142(89.87)	0.66(0.38-1.16)	0.15
Health Systems Factors				
Friendly services				
Yes	43(15.99)	226(84.01)	1	
No	6(5.71)	99(94.29)	0.36(0.16-0.82)	0.02*

NOTE: Knowledge was assessed by giving 1 to the correct response and 0 to the wrong response. The scale measured knowledge from maximum 6 questions answered correctly to minimum 0. Scores < 3 were taken as inadequate knowledge, ≥ 3 as adequate knowledge of HTS.

6.2.1 Multivariate analysis of factors associated with utilization of HTS

In the multivariable analysis, parents‘ financial support for adolescents to go for HTS and friendly services were statistically significant factors at 95% CI. Adolescents who perceived they would not receive their parents‘ financial support were more likely to utilize HTS compared to those who anticipated their parents would provide financial support after adjusting for other factors (APR = 2.06; CI = 1.14-3.75). Also, adolescents were less likely to utilize HTS if they felt the services were not friendly compared to those who felt the services were friendly after adjusting for other factors (APR = 0.37; CI = 0.15- 0.95) as shown in table 3.

Table 5: Multivariate results showing factors associated with Utilisation of HTS among adolescents (N=374)

Adolescent Characteristic	Utilization		Crude PR (95% CI)	Adjusted PR (95% CI)	P-Value
	Yes (%)	No (%)			
Sex					
Male	24(13.95)	148(86.05)	1	1	
Female	25(12.38)	177(87.62)	0.89(0.53-1.50)	0.78(0.46-1.32)	0.36
Age					
11-14	19(11.18)	151(88.82)	1	1	
15-19	30(14.71)	174(85.29)	1.32(0.77-2.25)	0.97(0.55-1.72)	0.92
Religion					
Catholic	25(15.15)	140(84.85)	1	1	
Protestant	12(9.09)	120(90.91)	0.60(0.31-1.15)	0.59(0.32-1.11)	0.10
Pentecostal/Muslim/ Others	12(15.58)	65(84.42)	1.03(0.56-1.94)	0.91(0.47-1.75)	0.78
Knowledge on HTS					
Inadequate Knowledge	1(2.56)	38(97.44)	1		
Adequate Knowledge	48(14.33)	287(85.67)	5.59(0.79-39.47)	5.3(0.80-35.18)	0.08
Community Factors					
Parents financial support					
Yes	38(12.54)	265 (87.46)	1	1	
No	11(15.19)	60(84.51)	0.55(0.66-2.29)	2.06(1.14-3.75)	0.02*
Local leaders support					
Yes	33(15.28)	183(84.72)	1	1	
No	16(10.13)	142(89.87)	0.66(0.38-1.16)	0.81(0.45-1.46)	0.49
Health System Factors					
Friendly services					
Yes	43(15.99)	226(84.01)	1	1	
No	6(5.71)	99(94.29)	0.36(0.16-0.82)	0.37(0.15- 0.95)	0.04*

6.3.0 Barriers to utilisation of HIV testing services

Factors influencing utilization of HTS are borne out of individual, community and health system behavior and beliefs, although some of these factors can negatively influence use of HTS. These results reveal barriers to utilization of HTS among adolescents.

6.3.1 Individual Related Barriers

Among the 329 (86.9%) of participants who did not receive HTS, 37.1% had a perception of low risk, 14.3% doubted health worker confidentiality in that they feared the health workers would disclose their results to the community, 10.9% did not know where to go for testing, 14.3% were afraid of stigmatization and 23.1% were scared of positive results (Fig 3).

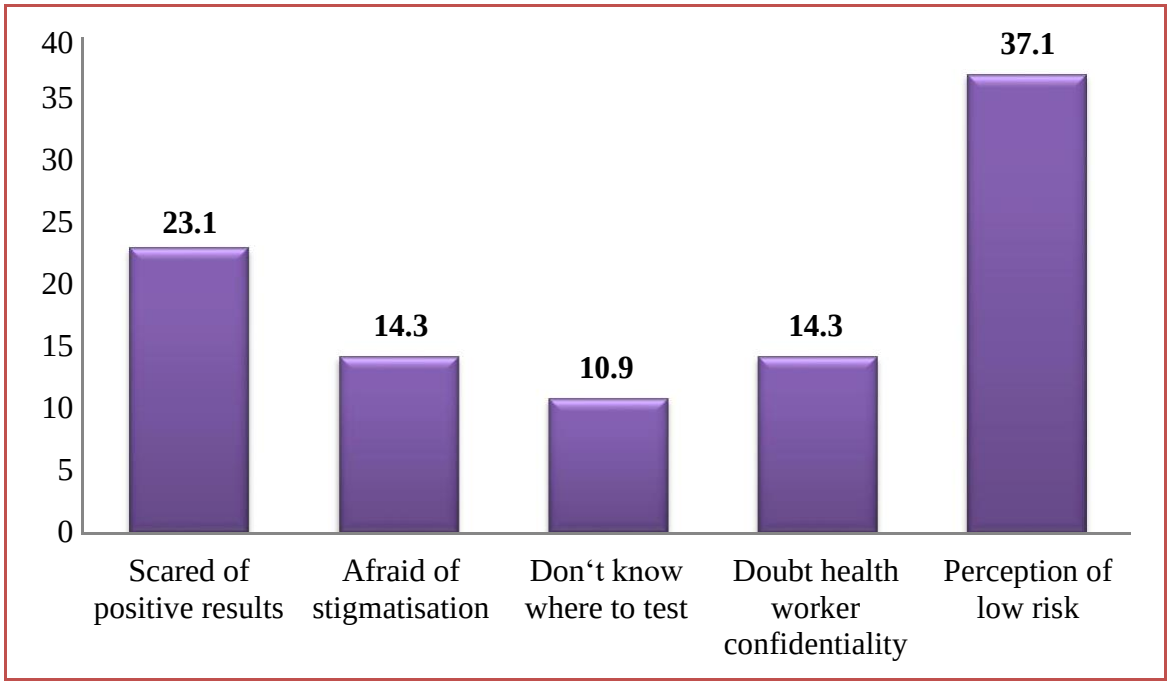

Figure 3: Showing barriers to utilisation of HTS

According to the key informants, there was a general feeling that utilization of HIV testing services among adolescents was low and the following individual barriers were perceived to be associated with utilisation of HTS;

Fear of positive results

Fear of positive HIV status and associated stigma was the leading barrier highlighted by all the key informants. Fear of the consequences of having an HIV test turning positive and associated stigma from peers and providers. The fear to test by adolescents is associated with history of

risky sexual behavior. Also, risky behavior can influence decision to use HTS, and adolescents who perceive themselves to be at risk are less likely to test, fearing a positive result.

"...Knowing that you have contracted HIV/AIDS still causes terror across all age groups and adolescents are not an exception. It's worse with adolescents" KI_1.

—... once they have tested positive, they would not be as happy as they are currently, they will be constantly thinking of their results…it's a fear that does not respect persons, the fear of being positive affects adolescents most" KI_ 2.

"...Fear and hopelessness surround everyone found positive and adolescents are immune to this nightmare. They will avoid every opportunity that could let them know their HIV status" KI_ 3.

Lack of knowledge on HTS

Many key informants reported that adolescent age and lack of autonomy made them vulnerable and unable to manage the consequences of a positive HIV result and due to their lack of appropriate knowledge and a perceived lack of support results in these adolescents avoiding HTS and the likely outcome. Adolescent inadequate knowledge of HIV/AIDS continues to be a barrier to HTS. Although comprehensive counselling and education about HIV is offered as part of the HTS package, adolescents who decline HTS do not access this information. Also, on the part of HTS providers, there remains a big gap of inadequate knowledge and training of health workers in addressing the complication of HIV among adolescents such as consent, disclosure and appropriate language to discuss HIV.

"…Adolescents do lack comprehensive knowledge about HIV because they do not know; they make wrong choices especially related to HTS. They also don't know they are at a high risk of contracting HIV" KI_ 2.

"…there is also lack of specialized training for health workers, the teams at lower health facilities lack knowledge on how to address adolescent issues and because the structure exists without special clinics for adolescents" KI_3.

"….most health workers in lower health units are not trained to provide high quality counselling to prepare adolescents for HTS, the right counselling will enable adolescent one to use HIV services" KI_1.

Perception of low risk

The key informants noted that there continues to exist, the mistaken perception of individual risk. Some adolescents including their parents and guardians consider HTS not to be necessary nor important, while adolescents whose parents are known to have died as a result of HIV rely on their care givers to be able to access HTS.

—…most adolescents believe they don't have HIV. This makes them reluctant from knowing their status because they think they are not at risk they believe it's not necessary to test. HIV is for older persons" KI_3.

6.3.2 Community Barriers to HTS

Level of support

The level of support offered to adolescents before and after testing is vital for the success of increasing the utilisation of HTS. Adolescents do not only seek support from the professional workers, but also from family and peers, as well as acceptance by the wider community.

However, if they are not stimulated by a helpful family, peers and health worker relation with relevant information sharing, they are not stimulated to use HTS. Inadequate HTS knowledge and lack of support from peers, family, and the community at large are factors found to influence decision to utilise HTS. While there are concerns about stigma and discrimination, adolescents are encouraged by support of those whom they can trust. Responses from three in-charges of health facilities reveal that influence of peers and family affects utilisation of HTS among adolescents.

"…there is still stigma and judgmental attitudes by both health workers and community. Adolescents need support from friends and relatives to have confidence to use HTS" KI_5.

"…they need support because of their age; adolescents cannot make independent rational decisions. Support from their families and the entire community can remove anxiety" KI_4.

"…If we want to see more adolescent coming to test and use other HIV services, parents, health workers, peers and community must be seen as supportive instead of discriminative" KI_ 3.

6.3.3 Health System Barriers to HTS

Attitude of health workers

Some of the key informants noted that adolescents continue to be critical of the structuring and environment of the health facilities. Their understanding of the testing environment is important for positive feedback to their own peers. The testing environment is therefore vital in enhancing greater access to HTS. Stigma and discrimination whether enacted or perceived and judgmental attitude of health workers and the greater lack of friendliness in the content of services remain barriers to utilization of HTS by adolescents. Health workers at facilities should therefore be

conscious of the unique needs of adolescents and be prepared to provide high quality counselling to enable right and appropriate decision making by adolescents.

"…Because of bigger workloads especially at lower health facilities, some health workers are usually overwhelmed. This makes them sometimes to respond unprofessionally by not providing quality counselling" KI_1.

"…If health workers are not professional, their actions of response could become stigmatizing and consequently one could feel discriminated too. Rudeness and negative behavior could result from work stress; health workers sometimes work both night and day……"KI_4.

Confidentiality

Adolescents highly regard confidentiality by the health workers regarding any outcome of HTS. Absence of perceived confidentiality usually is a result of doubt that the health workers may violate their privacy and anonymity by not making known their status particularly if results turn out to be positive. Adolescents are also concerned about being identified receiving HTS because of speculation that could lead to stigma and discrimination. Key informants reported that lack of privacy makes the services to lack friendliness thereby raising fears of undesired experiences after testing. Confidentiality is an important value that must be perceived throughout the HTS cascade.

—… They also fear the lack of confidentiality as these health workers sometimes interact with the community they come from" KI_3.

"… Confidentiality must be packaged with all HIV services given to adolescent. Whether be it counselling or collection of drugs…confidentiality is as important as the services themselves without which HIV services are not consumed freely" KI_4.

"...when I perceive there is lack of confidentiality one can overlook the convenience of a nearby HIV testing service point and go further or decline seeking the desired service. Most adolescents will shy away from testing if they don't perceive confidentiality" KI_5.

CHAPTER SEVEN

7.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

7.0.0 DISCUSSION

The aim of this study was to investigate factors associated with utilization of HTS services among adolescents. The findings of the study show that 13.1% had tested for HIV in the past 12 months and received their results, a level which is higher than the initial estimate by the district but still significantly lower than the national average for HIV testing uptake among adolescents of 35.6% (MOH, 2016b). Also, this is lower than the targeted 80% target for women and men (15-49 years) who should test for HIV and receive their results (UAC, 2015c). The correlates of HIV testing were friendly services and parents support. Only 14.3% had adequate knowledge about HIV and of those who did not test for HIV, about 92% would be willing to test if HTS were made available, 37.1% had a perception of low risk, 23.1% were scared of positive results and 10.9% did not know where to go for HIV testing.

7.1.1 Level of utilization of HTS

Ascertaining the level of utilisation of HTS among adolescents is important, not only because they vulnerable and are a priority group targeted by the national HIV/AIDS control program. In most cases they also experience unique obstacles in accessing and using HTS [UDHS 2016]. The results of this study reveal a significantly higher level of utilisation of 13.1% than the previously estimated 3% cited in Soroti district reports. However, this is still lower than the national average of 35.6% among adolescents (UAC, 2015c). The difference could be arising from the fact that; this study was a household survey and the district estimates were not derived from a household survey and so the variance of data sources may well explain this difference. Furthermore, this study targeted the general adolescents as opposed to the most at risk groups targeted for HTS

(MOH, 2016b). Another reason could be arising from the limited use of quality control mechanisms to routinely-collected administrative and health facility data, whose data management processes still suffer challenges of incompleteness and missing data, arising from the extent to which data reports include all reportable events, and the denominator to measure utilization could have been different from the one used in this study. Generally, this low level of utilization could be due fact that adolescents fear the threat of HIV related stigma, they are scared of positive results as well as doubting health workers confidentiality as highlighted among the barriers to HTS. This implies that strategies for friendly services are required and adolescent peers should be involved in service delivery (Musumari et al., 2016b).

7.1.2 Factors associated with utilization of HTS

Adolescents who felt they would not receive parents‘ financial support to go for HTS were more likely to utilise HTS compared to those who felt their parents would give financial support. This might be due to the fact that, receiving financial support from parents would require sharing the outcome of the test with them, a situation adolescents most likely fear will cause stigma with in the family if the results are not desirable. Adolescents are usually confident to take the test and would not need family support because they expect a good outcome in the results (Idele et al., 2014). Also, adolescents fear the threat of HIV related stigma and discrimination from friends, family and community that could increase in case the results turn out to be positive. Their perception of lack of parents‘ involvement in the decision to go for HTS could explain why they would rather go to test alone because they would feel anonymous. On the other hand, the low uptake of HIV testing services by those who felt they would receive parents financial support may be due to the fact that their parent‘s role could have been a significant barrier because of stigmatisation and judgmental attitudes leading them not to participate in HIV prevention

programs, thereby making it hard for them to recognize the importance of knowing their HIV status as compared to those who perceived their parents would not provide financial support. This finding is similar to a study done in South Africa where parents financial support negatively impacted on utilisation of HTS because parents and guardians had other priorities and were judgmental to adolescent need to use HTS (Strauss et al., 2015a). In the above South African study the authors believed that parents support turns out as a barrier when parents think a positive result in the adolescent automatically indicates their own HIV status and there is also a misdirected desire to protect the adolescent from the stigma arising from the community (Strauss et al., 2015a, Wong et al., 2017). However, this study differs with the finding of a Tanzania study by (Zawadi et al., 2015), whose findings indicated that the utilisation of HTS increased with financial support from family to go for HTS. The authors argued that financial support by the family was important in reducing anxiety and fear of test results. However, this depends also on other reasons like previous risk as a result of being sexually active and whether there was suspected vertical transmission of HIV which were expected to influence utilisation of HTS.

The rate of HTS utilisation was found to increase when adolescents perceived that the services were adolescent friendly. Adolescents that did not perceive the HTS services as being adolescent friendly were less likely to utilise HTS as compared to those who reported that the services were adolescent friendly. This finding might be due to the fact that adolescents like to receive services tailored to their needs including being served by persons of their age bracket. This finding is similar to the finding of a study conducted in Thailand which recommended that there was great need to develop adolescent friendly strategies to increase utilisation of HTS among this age (Musumari et al., 2016a). Therefore, the provision of adolescent friendly services is essential to high utilization of HTS.

7.1.3 Barriers of HTS utilization among adolescents

Adolescents who perceive themselves to be more likely to have contracted HIV because of their risky sexual behaviour are more unwilling to test, highlighting the interaction between beliefs and behaviour, and consistent with existing literature (Idele et al., 2014, Macphail et al., 2015). Adolescents often would rather not undergo testing than risk finding out that they have HIV. This fear and anxiety can be worsened by a lack of knowledge of how to manage a positive result. Adolescents expressing feelings of fear and hopelessness because of a positive test result also perceives a lack of support from the family, peers and community in general, as well as an inability of the healthcare system to provide adequate counselling, care and support. Fear of a positive outcome of an HIV test is also shown to increase because of concerns about taking HIV medication and beliefs about potential side effects and the associated stigma and discrimination. Fear of receiving a positive result after test and having to live with HIV is more likely associated with lack of knowledge as well as a perceived lack of support from friends, family and the community at large. The fear of HIV-related stigma and discrimination, is well documented in existing literature (Bandason et al., 2013, Strauss et al., 2015c) and supported in this study, acts as strong barrier to utilisation of HTS for adolescents. Instead of using HTS, some adolescent would rather not test due to the associated stigma. Previous studies found that adolescents with perceived low risk were often unlikely to undergo testing if they felt certain they could not possibly be infected (Strauss et al., 2015b).

The threat of HIV-related stigma from friends, family and the community increases the fear of receiving a positive result (Strauss et al., 2015b, Bandason et al., 2013, Musumari et al., 2016a). This fear of stigma, which results from individuals‘ perceptions about the lack of support networks from family, society and the healthcare system, creates a number of other barriers to

testing, which may not exist if perceived stigma and discrimination were diminished. The perceived lack of confidentiality was a particular barrier expressed by participants. This was supported by previous studies where young people access sexual and reproductive health services in general and HTS specifically. Although much of this work focuses on the confidentiality of test results, a comparative analysis of associations between mode of HIV testing and Consent, Confidentiality, and Referral in four African countries found out people testing for HIV do not appear to experience adverse outcomes such as breaches of confidentiality, however their study was not targeting adolescent (Obermeyer et al., 2012) . This study emphasizes that perceptions about the reasons for confidentiality breaches do vary between adolescents. Knowledge about HIV and HTS, and the support systems in place, including family, friends and the community at large, were found to be critically important in influencing adolescents decisions‘ to test (Strauss et al., 2015b).

All of the barriers reported by the adolescents and key informants in this study are linked back to fear of consequences of testing, but specifically, the stigma attached to testing and the fear of a positive result. This fear was found to be the result of a number of factors at the individual community and health system levels, with the behaviour of individuals influencing the way they view testing, as well as the way they perceive HIV related stigma and discrimination from those around them. If adolescents feel these fears were allayed, either because of their environment or a change in their own perception about HTS, this was found to increase utilisation of HTS.

Limitations

Some schools were conducting holiday classes and as such adolescents who attended those classes were missed out. Also, questions of sexual behaviour were not asked and that limits the scope of this study. Information was self-reported, and therefore a possibility of bias and

misclassification existed which was controlled for at the time of analysis. Also, In-depth Interviews with adolescents to understand their perception of barriers of HTS were not conducted and this limited the scope of this study. Furthermore, because this study was cross sectional, the results or findings in this paper may not be generalizable to the entire population of adolescents including those of the key population.

Further research should be conducted to understand the influence of stigma on adolescent response to HIV. It is critical that researchers examine rigorously the relationship between stigma-reduction efforts and HIV testing services. This would generate information to guide policy makers and planners on how to include stigma reduction as a key component of national HIV testing strategies for adolescents. If possible, researchers should assess all conceptual domains of HIV stigma and discrimination affecting adolescents in order to understand and measure the impact of specific stigma-reduction activities on the stigmatization process and their impact on utilization of HIV testing service for adolescents.

8.0 CONCLUSION AND REMMENDATIONS

8.1 Conclusion

This study found a low level of utilization of HIV testing services of only 13.1% among adolescents in Soroti district. Fear and perceived parental financial support to go for testing were found be the dominant drivers of this low utilization of HIV testing services, and this was fueled by associated HIV-related stigma and discrimination. On the other hand friendly services were seen to increase utilization of HTS. This low utilisation of HTS presents a significant problem for programme planners and policy makers, because of the number of adolescents needing to be tested, and the variety of sources of fear and real or perceived stigma and discrimination. Therefore, supporting adolescents to be meaningfully engaged in the design and delivery of HTS

is important to protect them from HIV and associated stigma and discrimination. Also understanding the way, in which age and other situations such as gender and sexuality influence on utilization of HTS, is significant to the provision of effective interventions targeting adolescents. In addition, influencing adults with power and control on the lives of adolescents means that engaging various stakeholders such as parents, health providers and community leaders is key to HIV programing for adolescents.

8.2 Recommendations

The MOH and the district should improve adolescent HIV response by developing and disseminating adequate, age appropriate and correct HIV education messages in schools, health facilities, and community through hand-books, charts and posters and all media. These stigma and discrimination reduction strategies should be implemented across all health facilities and communities. These messages should link to adolescent friendly services provided in a stigma free environment where adolescents feel safe to go alone.

Adolescents have the potential to be great peer educators, and to help in the design of friendly HIV-related services and programmes. This therefore calls for the MOH and the district to provide a platform to engage the adolescents in planning, prioritisation and implementation of HIV programs that are specific to their age group.

The DHO‘s office should commit resources to support capacity building of healthcare workers through support supervision and continuous medical education (CME) at respective facilities to meet the needs of adolescents, so that they do not face stigma, judgement, or a breach in confidentiality.

The Ministry of Health through the DHO‘s office and local authorities should conduct dialogue meetings to influence the power and control that parents, caregivers and guardians have on the lives of adolescents. This means that engaging various stakeholders such as parents, health providers and community leaders is important in dealing with the anticipated fear of stigma from their families and communities that would make them unwilling to come forward for HIV testing to improving utilisation of HIV testing services for adolescents.

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Appendices

Appendix: I Informed Consent Form

Study Title: Utilisation of HTS among Adolescents Aged 10-19 Years in Soroti District

Investigator: Okello Peter Simon

PURPOSE OF THE STUDY

This study is being conducted by Mr. Okello Peter Simon, a student of Makerere University, School of Public Health as partial fulfilment for the award of a Master of Health Services Research. The survey will assess the factors associated with utilization of HIV Testing Services among adolescents aged 10-19 years in Soroti District. Results from this research will be useful for policy makers in the government departments to provide information on the need to plan successful HIV testing services for in Uganda. You will be asked to participate if you are an adolescent aged 10-19 years and has expressed interest in participating in this study.

PROCEDURES

If you decide to participate in this study, the study will first need to confirm your eligibility by ascertaining your age in years. Also, if you are below the age of 18 years, parent/guardian consent will be sought before you can participate in the study. The interview will not take more than 30 minutes and will be conducted by the trained Research Assistant. You are therefore asked to share information on factors associated with utilisation of HIV Testing Services among adolescents. Your responses to the structured questions will be marked alongside the answer options provided and additional opinions will be filled in the spaces provided by the Research Assistant. This information is important at the start of the study so that we can ensure the conduct of research is appropriate and that the risk reduction methods discussed are suitable for you.

POTENTIAL RISKS AND DISCOMFORTS

The design of this study does not involve any medical intervention except that you will be required to provide verbal responses to standard questions in the questionnaire. The Research Assistant will make sure all the questions are asked appropriately and will not cause any emotional distress. Any negative reactions or distress that you experience during the study will be assessed immediately. Although the study will make all attempts to keep the information you provide confidential, as described below, a violation or loss of confidentiality is possible.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Participating in this study may not have any direct benefits for you; however, if you participate in the study as a respondent you may increase your knowledge of HIV testing services and know how they can be of direct benefit irrespective of your status. Your participation also will help to inform programs aimed at improving HIV testing services for adolescents and other people considering using them.

INCENTIVE FOR PARTICIPATION

You will not receive any financial rewards for participating in the study except for a soft drink for your refreshment that will be given at the study visit when the questionnaire is being administered.

CONFIDENTIALITY

The results of the study filled in the questionnaires will be kept confidential. Any identifying information that you provide (such as your name, and where you live) will be kept separate from the filled questionnaires and in a locked cabinet or secured computer file. Only the principal Investigator and Research Assistants who are members of the study team will have access to the questionnaires. The information you give to the study will not be made available to anyone outside of the study team. A version of the study data in which all identifying information is removed may be made available for use by other scientists for the purpose of further research.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

Your participation in this study is voluntary and you may withdraw your consent in the course of the interview without any penalty even after you have agreed to participate.

RIGHTS OF RESEARCH PARTICIPANTS

You may choose not to be in the study or discontinue your participation at any time without loss of benefits to which you are otherwise entitled. You are not giving up any legal claims or rights because of your participation in this research study. If you have questions regarding your rights as a research participant**,** contact Dr Suzanne Kiwanuka, Chair of the Institutional Review Committee at Makerere University, School of Public Health on 0393 291397. If you have any questions or concerns about the research, please contact the study investigator, Okello Peter Simon on 0772821430.

CONSENT TO PARTICIPATE

I have read (or someone has read to me) the information provided above, and I understand it. I have been allowed to ask questions. All of my questions have been answered to my satisfaction. I voluntarily agree to participate in this research study.

I have been given a copy of this form.

_____ _____

Signature or thumbprint of participant Date

_____ _____

Signature of witness (for non-literate participant) Date

_____ _____

Signature of research staff member Date

Appendix II: Questionnaire

STUDY OF UTILISATION OF HIV TESTING SERVICES AMONG ADOLESCENTS AGED 10-19 YEARS IN SOROTI DISTRICT

General information

Name of the interviewer……. Date…….

Questionnaire No…… Sub-county…… Parish…….

Village……

Identification No. ……

A. Adolescent Characteristics

1. Sex
   1= Male [….]
   2=Female […..]
2. Age of the respondent in years ……

3. What is the highest level of education attained? Please Tick appropriately
   1=None […].
   2= primary [….].
   3= secondary [….].
   4= Tertiary [….].

4. Religion:
   1= Catholic […].
   2= Protestant […].
   3=Pentecostal […].
   3= Moslem […].
   4=others (specify) …….

5. Are you ……? Tick
   appropriate 1=single [….].
   2=married [….].
   3= separated/divorced [ ]
   4= widow/widower […].
6. What is your current employment status?
   1= unemployed
   2= student
   3= formal employment
   4=self-employed
   5=other (specify)…….
7. What is your tribe? 1= Etesot [ ]2= Kumam [ ] 3 =Other (specify)…….

B. Knowledge on HTS

8. What is the best-known mode of HIV/AIDS transmission? *Tick only one mentioned*

    1. By having sexual intercourse with a person who is infected with HIV[ ]
    2. Mother passing it to the unborn baby. [ ]
    3. Sharing sharp objects. [ ]
    4. I don‘t know [ ]
    5. Other (specify)……

9. Could you please tell me how you can find out if one has the virus that causes AIDS? Tick *only one*
    1. Taking an HIV test [].
    2. Doctor‘s Examination [ ].
    3. Don‘t know [ ].
    4. Other (specify)**……**

10. Have you ever heard of HIV Testing Services?
    1. Yes [ ].
    2. No [ ]……,If ‗No‘ skip and go to 13.

11. Where did you get the information about HIV Testing Services? Choose only one source
    1. Radio [ ].
    2. Health worker [ ].
    3. Relative [ ].
    4. Straight talks [ ].
    5. Other (specify)…….

12. What do you know about HIV Testing Services?
    1. Testing for HIV when someone forces you to do so but not your own decision. [ ]
    2. Going for an HIV test after making a decision on your own without being forced by anyone [ ]

13. Do you know of any place here in Soroti where you can go and have an HIV test?
    1. Yes [ ].
    2. No [ ]……If ‗No‘ go to No. 16.

14. How did you know about the place?
    1. Health worker [ ].
    2. Friends [ ].
    3. Radio [ ].
    4. Other (specify)…….

15. What is the distance from your home to the nearest HIV testing site?
    1. <5km [ ].
    2. 5-10km [ ].

3. > 10 km [ ].

16. Do you know the benefits of having an HIV test?
    1. Yes [ ]
    2. No [ ]……skip 17 go to 18
17. What benefits does a person get in going for HTS? *Tick only one option*

1. People who test positive can get treatment [ ]
2. Effective at preventing spread from those who are positive to the negative [ ]
3. It also enables positive living through referral to treatment and care centres and peer support groups [ ]
4. Increases community awareness about HIV. [ ]
5. Reducing stigma among HIV/AIDS people. [ ]
6. Helps plan for future [ ]

18. Have you been previously tested? 1=Yes [ ]
    0=No [ ]……..If _No‘ go to 33
19. If Yes to 18, did you receive pre-test information?
    1=Yes 0=No
20. If Yes to 19, were you counselled after testing? 1= Yes 0= No
21. If Yes to 20, Did you receive your results?
    1=Yes0=No

22. Why have you not tested
    1=Scared of positive results [ ]
    2=Afraid of stigmatization [ ]
    3=I don‘t know where to test [ ]
    4=Afraid other people will know [ ]
    5=I am sure, I don‘t have HIV [ ]

23. How long did you take while at the testing health facility? 1= < 1 hour [ ]
    2= 1- 2 hours [ ]
    3= >2hours [ ]
24. Did you pay any money for the service offered?
    1=Yes [ ]
    2=No [ ]
25. Who should test for HIV
    1= Only sick people [ ]
    2=Ever body [ ]
    3= Only Female [ ]
    4= Only promiscuous people [ ]
    5=Pregnant Women only [ ]

6=Couples in marriage only [ ]

21. What was the reason/s for the response in (18) above?
……..... **……**

C. Attitudes and barriers to utilization of HTS

22. Would you be willing to have an HIV test carried out? 1=Yes [ ]
2=No [ ]
23. Do you think your parents / guardians would be willing to have you tested for HIV? 1= Yes [ ]
2= No [ ]
3= I don‘t know [ ]
24. Would your parents give you money to go for an HIV test?
1=Yes [ ]
2=No [ ]
3= I don‘t know [ ]

25. Have your peers (friends) ever encouraged you to go for HIV test?
1=Yes [ ]
2= No [ ]
26. Have the local leaders in your village ever encouraged adolescents to have an HIV test done?
1=Yes [ ] 2=No [ ]

27. Do you think the services offered at the HTS sites encourage adolescents to get involved?
1= Yes [ ] 2= No [ ]…If _No‘ …..go to 29
28. What makes you think the services are adolescent friendly? *Tick all mentioned*
1= Privacy [ ]
2= Counsellors keep the result as a secret [ ]
3= low cost [ ]
4=free [ ]
5=Counsellors are approachable [ ]
6= others (specify)…….
29. If no, what is it that the HTS site does that doesn‘t encourage the adolescents to be tested? *Tick all mentioned*
1= costs [ ]
2= carried out on specific days of the week [ ]
3= counsellors attitudes [ ]
4=No privacy [ ]
5= others (specify)……

30**.** In your view why do you think adolescents go for HTS services? (Tick all mentioned).

1= know their status [ ]
2= get married [ ]
3= asked by their parents [ ]
4= start a relationship [ ]
5=Provider initiated
6= other (specify).....

31. What suggestions would you give to improve HTS utilization among adolescents?.

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THANK YOU FOR PARTICIPATING!

Appendix III: Key Informant Guide

STUDY OF UTILISATION OF HIV TESTING SERVICES AMONG ADOLESCENTS AGED 10-19 YEARS IN SOROTI DISTRICT Key Informant Guide

1. Please tell us your experience implementing adolescent friendly services?
2. Where do the adolescents in Soroti District get information on HTS?
   Probe
   - How is this information disseminated? And by whom?
3. What do you think are some of the individual barriers of utilization of HTS among adolescents in Soroti District?
   Probe
   - For perceived lack of privacy, fear, perceived lack of confidentiality perceived lack of support
4. What do you think are some of the health system barriers of utilization of HTS among adolescents in Soroti District?
   Probe for
   - Health worker poor attitude judgmental behavior distance
5. What do you think are some of the community barriers of utilization of HTS among adolescents in Soroti District?
   Probe for
   - Stigma and discrimination, lack of support from gamily, peers and community
6. What are some of the suggestions that could help adolescent to utilize HTS?
7. Is there anything else you would like to share?
   Thank you for sparing your valuable time to give information for this study

THANK YOU