

**HIV/AIDS TESTING AND COUNSELING PRACTICES IN UGANDA:
A PROGRAM PROPOSAL**

by

Courtney S. Smalt

BA, Houghton College, 2015

Submitted to the Graduate Faculty of
the Department of Behavioral and Community Sciences
of the requirements for the degree of
Master of Public Health

University of Pittsburgh

2019

UNIVERSITY OF PITTSBURGH
GRADUATE SCHOOL OF PUBLIC HEALTH

This thesis was presented

by

Courtney S. Smalt

It was defended on

April 18, 2019

and approved by

Thesis Advisor:

Martha Ann Terry, PhD
Associate Professor
Behavioral and Community Health Sciences
Graduate School of Public Health
University of Pittsburgh

Committee Members:

Louis Picard, PhD
Professor
International Development
Graduate School of Public and International Affairs
University of Pittsburgh

Jessica G. Burke, PhD
Associate Professor
Behavioral and Community Health Sciences
Graduate School of Public Health
University of Pittsburgh

Copyright © by Courtney S. Smalt

2019

Martha Ann Terry, PhD

HIV/AIDS TESTING AND COUNSELING PRACTICES IN UGANDA: A PROPOSAL

Courtney S. Smalt, MPH

University of Pittsburgh, 2019

ABSTRACT

The current HIV epidemic, thought to have begun in the 1970s, was recognized as an emerging disease in the early 1980s. HIV most likely originated in the Democratic Republic of Congo around 1920 when HIV crossed the species barrier from chimpanzees to human. HIV first appeared in Uganda in 1986. Since 1992 Uganda has had a significant decline in HIV prevalence from 24 percent at the height of the epidemic to six percent in the early 2000s and remains steady. The World Health Organization program currently outlines prevention strategies: (1) testing and counseling, (2) using condoms (male or female), (3) volunteering for male medical circumcision, (4) using antiretroviral therapies (ARTs), (5) using harm reduction strategies, and (6) eliminating mother-to-child transmission. A range of factors from accessibility, availability to sociocultural norms influences the use of HIV testing and counseling services in Uganda. Currently, in Uganda, roughly half of the adult population (55 percent of women and 47 percent of men) have had an HIV test in the past year and are aware of their HIV status. The main gap in HIV testing and counseling services is the lack of community-based services. The limited community-level services and supports that exist do not cover the full continuum of care.

Public Health Statement: The proposed program seeks to reduce these barriers by offering community-based HIV Testing and Counseling services at a trusted youth-focused organization, and through a community-led advocacy campaign for equitable relationships.

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	BACKGROUND	4
2.1	GLOBAL INITIATIVES TO RESPOND TO HIV/AIDS	5
2.2	THE HISTORY OF HIV IN UGANDA	7
2.3	HIV PREVENTION STRATEGIES.....	11
2.4	THE SOCIAL CONTEXT OF HIV TESTING AND COUNSELING IN UGANDA TODAY.....	15
2.4.1	Stigma	16
2.4.2	Gender Inequalities	19
3.0	REVIEW OF RELEVANT LITERATURE.....	23
3.1	TARGET POPULATION: ADOLESCENTS.....	26
4.0	PROGRAM PLAN.....	30
4.1	CHOICE OF APPROACH.....	31
4.2	COMMUNITY ENGAGEMENT.....	38
4.3	ACTIVITIES.....	39
4.4	SUSTAINABILITY	41
4.5	REPORTING.....	42
5.0	CONCLUSION.....	43
	BIBLIOGRAPHY.....	47

LIST OF FIGURES

Figure 1 Key Staff.....	40
Figure 2 Logic Model	46

1.0 INTRODUCTION

Before the 1980s the world was unaware of the existence of HIV/AIDS. HIV originated in the Democratic Republic of Congo around 1920 when HIV crossed the species barrier from chimpanzees to humans (AVERT, 2018). Sporadic cases of AIDS were documented before 1970; however, current data suggest that the current epidemic began in the mid-to-late 1970s. By the 1980s the epidemic had spread across five continents (North America, South America, Europe, Africa, and Australia). In September 1982 the Centers for Disease Control and Prevention (CDC) in the United States (U.S.) first used the term AIDS, following several cases of severe immune deficiency among gay men in New York and California. Between 1981 and 1987 the scientific community discovered that HIV spread through unprotected sexual activity, intravenous drug use, unsafe blood transfusions, and in utero from mother to child. In 1987 the World Health Organization (WHO) launched the first Global Program on AIDS to raise awareness, generate policy, and provide technical and financial support to countries to develop a response to control the epidemic (AVERT, 2018).

The global response to HIV occurred in phases marked by major multilateral initiatives. The first was the WHO's Global Program on AIDS. The second initiative followed in 1996, when the United Nations created a new agency to head the response, focusing on efforts to raise awareness and advocate for a comprehensive approach to prevention (Harvard University Initiative for Global Health, 2006). The third initiative, began in 2002, was the development of the Global Fund for AIDS, Tuberculosis, and Malaria, created to channel resources to these three diseases

(Harvard University Initiative for Global Health, 2006). In 2014, UNAIDS launched the current initiative to dramatically scale-up HIV prevention and treatment programs to end the epidemic as a public health issue by 2030 (AVERT, 2018).

HIV first appeared in Uganda in 1986. Since 1992 Uganda has had a significant decline in HIV prevalence from 24 percent at the height of the epidemic to 6 percent in the early 2000s (Thornton, 2008). The HIV prevalence rate remains at 6 percent nationally, but regional differences exist ranging from three percent to eight percent (Ministry of Health, 2017). Uganda's response to HIV/AIDS since 1986 has involved a strong commitment from the government, civil society, and the international community. The government provides a framework and acts as a coordinator of policy, funds, and implementation of HIV treatment and prevention programs. Meanwhile, civil society has largely been responsible for the service delivery of HIV programs, and its role has continued to grow throughout the years (Thornton, 2008).

HIV/AIDS prevention strategies include behavioral, social and medical interventions. Six prevention strategies exist: (1) testing and counseling, (2) using condoms (male or female), (3) volunteering for male medical circumcision, (4) using antiretroviral therapies (ARTs), (5) using harm reduction strategies, and (6) eliminating mother-to-child transmission (World Health Organization, 2018). Along with messaging about safe sex practices, the use of ARTs for preventative purposes is currently being rolled out and scaled up globally (WHO, 2018).

A range of factors from accessibility and availability to sociocultural norms influences the use of HIV testing and counseling services in Uganda. Currently, in Uganda, roughly half of the adult population (55 percent of women and 47 percent of men) have had an HIV test in the past year and are aware of their HIV status (Uganda Bureau of Statistics, 2018). Despite the extensive efforts to control the HIV epidemic, second leading cause of death are HIV-related in Uganda in 2017 (Institute of Health Metrics and Evaluation, 2017).

The purpose of this paper is to propose a pilot community-based HIV testing and counseling program in Kisubi, Uganda. The paper will explore the current landscape of HIV prevention and treatment programming in Uganda. The proposed pilot program is designed to fill a gap in testing and counseling services in Kisubi among adolescent and young adults.

The analysis of Uganda's response and prevention efforts to the HIV epidemic occurs in three parts. First, the background will briefly survey the growth of the HIV epidemic and the global response. Following the global picture of HIV is an exploration of the structure of Uganda's response since the beginning of the epidemic. Third, is the examination of two sociocultural factors, stigma and gender inequalities which affect the use of testing and counseling services in Uganda.

The second, section is the result of a review of the relevant literature regarding testing and counseling programs in Uganda. This section describes HIV testing and counseling practices and programs available and gaps in the HIV continuum of care in Uganda.

The final section of the paper is a proposal of a pilot program to address the gap of community-based programming in Kisubi, Uganda. This section outlines the choice of approach, activities, monitoring, and evaluation, community partners, sustainability and reporting mechanism of the proposed program.

2.0 BACKGROUND

In the early 1980s, two unusual diagnoses began emerging throughout the world. First, *Kaposi Sarcoma*, a cancer common among elderly populations, began to appear in younger patients (Public Health, 2019). Second, a rare and aggressive form of pneumonia, *Pneumocystis carinii pneumonia*, presented in another group of patients. By the end of 1981, there were 270 reported cases of severe immune deficiency among gay men in California and New York (AVERT, 2018). In June 1982, experts believed that HIV originated in Haiti after a group of hemophiliacs presented with severe immune deficiency. Experts began to understand HIV as an emerging disease in 1982. Nearly 500 cases were documented in 23 states across the United States within one year (Public Health, 2019). The CDC and WHO began tracking similar outbreaks across the globe, catching a glimpse at an epidemic.

In 1983 the WHO held its first meeting to assess the HIV situation and set up an international surveillance system. The WHO documented outbreaks in 15 European countries, seven Latin American countries, Canada, Zaire, Haiti, Australia, and Japan in addition to the United States in 1983 (Public Health, 2019). By the end of 1986, 85 countries reported 38,401 cases of AIDS collectively (AVERT, 2018). The epidemic reached new heights in the late 1990s with an estimated 33 million people living with HIV worldwide, and 14 million people had died from AIDS since the start of the epidemic. By 2000 AIDS was the fourth leading cause of death globally and the leading cause of death in Africa (AVERT, 2018).

Today, 36.9 million people are living with HIV worldwide (UNAIDS, 2018a). In 2017, the number of new HIV infections was 1.8 million. The incidence of HIV infections has been reduced by 47 percent since the height of the epidemic in 1996 (UNAIDS, 2018a). Since 2010, new HIV infections among adults declined from 1.9 million to 1.6 million, an estimated 16 percent reduction (UNAIDS, 2018a). An increase in funding and research, intensive delivery of a combination of prevention packages, and new treatment options have led to the reduction of new HIV infections. However, the reduction of HIV incidence is not equally distributed throughout the world. Eastern and southern Africa account for over half (53 percent) of people living with HIV globally (UNAIDS, 2018a). Women account for a disproportionate percentage of new HIV infections throughout Sub-Saharan Africa (UNAIDS, 2018a). Adolescent and young adult women (aged 15-24 years) account for one in four new HIV infections today (UNAIDS, 2018a). Throughout the course of the HIV epidemic the international community has undertaken several initiatives to control the spread of HIV beginning in 1987.

2.1 GLOBAL INITIATIVES TO RESPOND TO HIV/AIDS

The WHO's Special Program on AIDS was formed in February 1987. The Special Program was the foundation for a global plan to control the spread of AIDS and raised funds to implement the plan (Mann, 1987). The Special Program established seven fundamental concepts: HIV is an international health problem, HIV infections have adverse health outcomes of profound personal, family and social importance, HIV threatens the limited gains in health that have been achieved in the developing world, the HIV global effort will be long term and will likely last beyond our generation, HIV treatments like a vaccine or therapy for wide spread use will not be available for

many years, HIV prevention and control programs need to be integrated with primary health, and the HIV pandemic represents an unprecedented challenge to public health that mandates a response equally unprecedented creativity, energy, and resource. The global plan had three objectives: (1) to prevent HIV transmission, (2) to take care of HIV-infected persons (to reduce morbidity and mortality associated with HIV infection), and (3) to unite national and international efforts for global AIDS control. The Special Program was established in more than 150 countries and provided more than 250 technical support missions. By the end of 1987, the program had already assisted 58 countries in preparing national AIDS control plans, including Uganda. The Special Program was responsible for establishing strategic leadership, developing consensus, coordinating research, exchanging information, assuring technical cooperation and mobilizing resources (Mann, 1987).

In 1996 the UNAIDS agency was established to provide strategic direction, advocacy, coordination and technical support to governments (UNAIDS, 2019). UNAIDS is a joint program drawing on the experience and expertise of 11 other United Nations agencies. One of UNAIDS' main activities is to generate and collect data on HIV epidemiology, program coverage, and finance. Another activity is to shape public policy at all levels through using evidence-based policy strategies, building health and community systems, and establishing legal frameworks (UNAIDS, 2019).

The Global Fund for HIV, Malaria, and Tuberculosis was founded in 2002, to coordinate and fund prevention, treatment and care services of these three epidemics (Global Fund, 2019). The Global Fund is a partnership between governments, civil society, the private sector, and affected populations. The Global Fund distributes approximately \$4 billion (USD) each year to support programs in more than 100 countries. The Global Fund has saved an estimated 27 million

lives since 2002. On average, countries that partner with the Global Fund have a 33 percent reduction in HIV, TB, and malaria-related deaths per year (Global Fund, 2019).

UNAIDS currently has two initiatives to end the HIV epidemic by 2030. First are the Fast-Track commitments: (1) reducing new HIV infections to fewer than 500,000 by 2020, (2) reducing AIDS-related deaths to fewer than 500,000 by 2020, and (3) eliminating HIV-related stigma and discrimination by 2020 (UNAIDS, 2019). Second is the 90-90-90 campaign: 90 percent of those living with HIV are diagnosed, 90 percent of those diagnosed as HIV positive are on ARTs, and 90 percent of people living with HIV reach viral suppression by 2020. In 2016, 70 percent of people living with HIV knew their status, 77 percent of who knew their HIV positive status were accessing treatment, and 82 percent of people on treatment have suppressed viral loads worldwide (UNAIDS, 2019). To understand HIV in Uganda's current context it is important to first understand Uganda's historical response to the epidemic.

2.2 THE HISTORY OF HIV IN UGANDA

In 1984, roughly two years after the first diagnosed cases of HIV/AIDS in the United States, a team of doctors and researchers began to investigate instances in Uganda similar to initial cases in San Francisco (Thornton, 2008). Two decades before, the nation gained independence from Great Britain and survived two regime changes between President Milton Obote and Idi Amin Dada (Thornton, 2008). The 1970s in Uganda were marked by war, economic collapse, and the decay of infrastructure, industry, and governance. With the help of Tanzania's military President Obote returned to power in 1980. According to the anthropologist Thornton (2008), "most Ugandans blamed the arrival of AIDS in the country on the violence and social dislocations

of this era” (p.7). HIV/AIDS first appeared in the southwestern region of the country, where Tanzanian troops had crossed into Uganda (Thornton, 2008). The disease then spread along the shore of Lake Victoria as smuggling, trading, and raids took place. The Ugandan government’s approach to controlling the HIV epidemic has been to manage, and support activities of other actors(Parkhurst, 2005).

The Ugandan government’s first response to HIV/AIDS occurred in 1986 when the current president, Yoweri Museveni, came to power (Thornton, 2008). President Museveni has been credited with much of the success in decreasing the prevalence of HIV/AIDS across the country in the 1990s (Parkhurst, 2005; Thornton, 2008). President Museveni acknowledged and publicly discussed HIV and sought help from non-governmental organizations (NGOs) within Uganda from governments and donors from abroad to create an early response (Parkhurst, 2005).

Uganda’s 1987 Action Plan was the first policy response to HIV/AIDS in Uganda. The objectives of the policy were guided and implemented through technical assistance provided by the WHO (Parkhurst, 2005). The 1987 Action Plan outlined five goals, the first being an assessment of the current HIV situation. Second was the establishment of a surveillance system. Data were gathered at surveillance sites to measure HIV prevalence among pregnant women (Parkhurst, 2005). The data were not generalizable to the entire population because the centers were located in urban or semi-urban areas; however, these sites were the primary source of data (Parkhurst, 2005; Thornton, 2008). The third goal was to prevent infection by reducing transmission through sex, blood transfusion, injection and skin lashing practices, other blood contact, and by decreasing mother-to-child transmission (Parkhurst, 2005). Fourth was to improve clinical management and diagnostic capabilities. Last was the coordination of research activities (Parkhurst, 2005).

Throughout the next decade, the government's response underwent several changes regarding approaches to HIV/AIDS, often reflecting development and donor trends. The 1987 Action Plan was the foundation for the HIV response, which was to be supported and implemented by locally oriented NGOs and other non-state actors, under the umbrella of the government (Parkhurst, 2005). In 1992, the Uganda AIDS Commission was formed and helped to launch the new "Multisectoral Approach" framework. The multisectoral approach was a call for all members of society to individually and collectively work to prevent HIV/AIDS while building the government's capacity to coordinate activities and respond to the epidemic.

The focus of the nation's response shifted again in 1993 when the World Bank pledged over \$70 million (USD) to the Ugandan government to incorporate sexually transmitted infections prevention into HIV/AIDS programs (Parkhurst, 2005). In 1996, the HIV/AIDS response came to include poverty elimination. The Poverty Eradication Action Plan was to supersede all other AIDS and health documents while becoming a prerequisite for foreign debt forgiveness. Parkhurst (2005) observed that "...this period saw few genuinely new recommendations for poverty-related HIV/AIDS intervention" (p. 582). Despite several changes, the strategies and objectives regarding HIV/AIDS prevention and treatment have largely gone unchanged since the 1987 Action Plan (Parkhurst, 2005).

The incorporation of civil society into the HIV/AIDS response by the government and the international community illustrates some of the trends in international development in the 1990s (Picard, Groelsema, & Buss, 2008). Civil society has been a major actor in response to the HIV epidemic from the beginning and has been responsible for much of the HIV/AIDS programming and intervention in the country. The role of NGOs has grown over time as has the government's reliance on NGOs for implementation and financing for prevention activities (Parkhurst, 2005). The number of civil society organizations involved in HIV prevention increased from roughly 700

in 2007 to over 1,100 in 2010 (Coutinho et al., 2012). The amount of funding for prevention services also increased from \$15 million (USD) in 2005 to over \$40 million in 2011 (USD) (Coutinho et al., 2012).

In the 1990s civil society organizations were used to spread prevention messages such as “AIDS kills,” “love carefully,” “zero grazing” and abstinence, be faithful and condoms (ABC) (Coutinho et al., 2012). All these messages relate to sexual behavior. For example, President Museveni promoted zero grazing and meant “carry on having sex but keep it local and close to home” (Thornton, 2008, p.19). As time went on and treatment began to improve, people living with HIV started their solidarity and support organizations (Coutinho et al., 2012). The most notable NGO working in HIV prevention and care in Uganda is The AIDS Support Organization (TASO). TASO was established in 1987 primarily to provide support and palliative care to its members (Coutinho et al., 2012). Since 1987 TASO has been involved in advocacy, education, and communication, treatment, counseling and palliative care, community mobilization and empowerment, and HIV prevention campaigns. Today TASO serves over 100,000 HIV positive individuals. TASO was one of the key players in the national scale-up for ARTs and testing and counseling programs (TASO, 2018).

Uganda has been heralded as a success story in reducing HIV prevalence in the developing world. From 1992 through the early 2000s the HIV prevalence throughout Uganda dramatically declined. The overall prevalence was roughly 24 percent at the peak of the epidemic and as high as 29 percent in Kampala (Thornton, 2008). The prevalence rate then dropped to as low as 6 percent in 2000 (Merson, 2006). In 2003, the prevailing explanation for the decline was sexual abstinence, and was presumed to be the result of the ABC campaign (Thornton, 2008). A team from United States Agency for International Development (USAID) went to Uganda to confirm the success of the ABC campaign but was abruptly stopped by the U.S. government when the

research results did not verify this (Thornton, 2008). Merson (2006) and Thornton (2008) both thought that while the decline in prevalence could be attributed to reduced risky sexual behaviors, it is not the complete picture. Merson (2006) credits the decline to six factors: (1) behavior change, (2) social and cultural influences like post-war stabilization, (3) natural evolution of the epidemic, high mortality rates and less transmission, (5) strong governmental leadership, and (6) an active civil society response. Thornton (2008) suggests that the decline in prevalence was related to the composition of sexual networks:

...it is very likely that what was happening during the period of increasing HIV prevalence in Uganda was an increase in the number of links (sexual contact) between person or groups of people (such as within villages), around nightclubs or bars, or at funerals or other ritual events, and especially an increase in the links between highly infected persons or clusters that were highly linked to other persons or clusters, such as soldiers and transportation workers, “sugar daddies/mamas,” and others. During the period of decreasing prevalence, overall connectivity decreased, but especially the links between highly infected persons or groups in the network and the general population decreased (p.45).

Other reviews have concluded that the main behavior changes seen during the 1990s were related to Thornton’s theory of sexual networks, rather than abstinence. Kirby, (2008) found the primary behavior changes were a reduction in the average number of sexual partners, delayed onset of sexual activity and later condom use. While these behavior changes are important, HIV testing and counseling is the first step in promoting these other types of preventative behaviors.

2.3 HIV PREVENTION STRATEGIES

Since the 1980s the HIV/AIDS pandemic has been the focus of much research and many policies, but getting HIV/AIDS under control has remained elusive. In part, controlling the spread of HIV/AIDS is challenging because the main modes of transmission involve human

behavior (WHO, 2018). Human-to-human HIV transmission occurs through the exchange of bodily fluids from an infected individual to an uninfected individual (WHO, 2018). Examples of bodily fluids include blood, breast milk, semen and vaginal secretions (WHO, 2018). HIV infection can be passed to an uninfected individual through (1) risky sexual behaviors such as unprotected anal or vaginal sex, (2) sharing injecting equipment and drug solutions, (3) receiving unsafe blood transfusions, needles and syringes, and other medical procedures involving unsterile equipment, and (4) mother-to-child transmission in utero or through breast milk (WHO, 2018). Any successful prevention strategy must take this into account.

Global treatment and prevention efforts consist of a combination of eight different strategies. These are using female and male condoms, testing and counseling, linking to tuberculosis care, volunteering for male medical circumcision, using ARTs, using harm reduction strategies, eliminating mother-to-child transmission, and treating HIV/AIDS. The first step in either the treatment or prevention process is to have individuals voluntarily test for HIV (WHO, 2018). HIV policies and programs in Uganda already use a combination of these strategies; however, to make these programs more robust and effective Uganda needs to focus on increasing HIV testing and counseling. HIV testing and counseling services are the gateway to accessing and utilizing other prevention and treatment strategies. The WHO (2018) has recommended five principles for HIV testing services: informed consent, confidentiality, counseling, correct test results, and connection to care, treatment, and other services. The WHO recommends testing and counseling for anyone who engaged in any of the behaviors described above (WHO, 2018). HIV testing and counseling (HTC) facilitates access to necessary prevention and treatment without delay. Testing with one's partner as a couple is strongly encouraged as some couples are

serodiscordant (one partner is HIV positive while the other is HIV negative). Getting tested together can reduce tensions and concerns in disclosing one's status to their partner (WHO, 2018). Lastly, counseling provided at the time of testing is recommended to assist individuals in accepting their results, link them to care, and help with disclosing their status to current or future partners (WHO, 2018).

Offering HIV testing in nonclinical settings has proven to be an effective strategy to increase accessibility in developed nations such as the United States and Australia. In Queensland, Australia, where the community faces barriers to accessing HIV testing such as fear, stigma, perceptions of risk and distance to testing locations, and cost, the RAPID program was implemented (Mutch et al., 2017). The RAPID program successfully met its goals of investing in early detection of HIV, increasing access to HIV testing (1,200 participants in 11 months received testing), and recruiting those seeking first-time testing (17.1 percent of participants) (Mutch et al., 2017). The RAPID strategy included the adoption of rapid HIV testing, the use of community settings for testing, peer services, and did not require the disclosure of sexual history (Mutch et al., 2017). The most effective elements of RAPID were the use of rapid HIV tests in a convenient peer-led, community-based service. This study suggests that community-based HIV testing is an important strategy to increase access to testing especially, among those seeking first-time testing (Mutch et al., 2017).

The second strategy to prevent new HIV infections is the use of male and female condoms. Condoms are effective at reducing the risk of infection only when they are used correctly and consistently during vaginal, anal or oral intercourse (WHO, 2018). Male condoms are 85 percent or more effective when used successfully (WHO, 2018).

The third strategy is to link HIV/AIDS care with tuberculosis (TB) treatment and care. TB is the most common presenting illness after an individual has contracted HIV (WHO, 2018).

Globally more than one in three HIV-related deaths are caused by TB, making it the most common cause of HIV-related deaths (WHO, 2018). Therefore, HIV and TB testing should be offered routinely and together. If an individual is diagnosed with HIV and active TB, then s/he should start TB treatment (including multidrug-resistant TB) and ARTs. In the case that an individual tests HIV positive but does not have an active TB infection, preventative TB therapy should be offered along with ARTs (WHO, 2018).

The fourth approach is voluntary medical male circumcision, which reduces the risk of heterosexually acquired HIV infection by up to 60 percent (WHO, 2018). Voluntary male circumcision is currently regarded as an effective approach to reaching men and boys who do not routinely seek health care services (WHO, 2018). The WHO (2018) recommends including voluntary medical male circumcision along with HIV testing, counseling, education on safer sex practices and condom use as part of the complete prevention package for males.

The fifth method is the use of ARTs, which consist of combinations of pharmaceuticals. Treatment for HIV/AIDS currently involves ART and addressing other opportunistic infections as they occur, such as TB and cryptococcal meningitis (WHO, 2018). There is no cure for HIV/AIDS, but ART suppresses the viral load of an HIV positive person, decreasing the risk of transmitting the virus by as much as 96 percent for an HIV positive individual (WHO, 2018). There are two types of preventative medication regimens: (1) pre-exposure prophylaxis (PrEP), and (2) post-exposure prophylaxis (PEP) for the HIV-negative partner. PrEP is recommended for individuals with substantial risk of getting HIV and for HIV-negative women who are pregnant or breastfeeding (WHO, 2018). Other key populations are sex workers, injection drug users, serodiscordant couples, and transgender women (WHO, 2018). PEP is to be initiated within 72 hours after exposure. PEP treatment includes counseling, first aid care, HIV testing and a 28-day course of antiretroviral (ARV) drugs and follow-up care (WHO, 2018). PEP is recommended for

both adults and children (WHO, 2018). The current WHO (2018) recommendation for HIV treatment is to provide lifelong ART to anyone living with HIV regardless of their clinical status or CD4 cell count (a specific type of immune cell).

The sixth method of HIV prevention is to use harm reduction techniques. Harm reduction is a set of strategies that aim to reduce the harms and risks associated with substance use for individuals for whom abstinence and other high-risk behaviors are not feasible (Harm Reduction International, 2019). Harm-reduction strategies include needle and syringe exchange programs, opioid substitution therapy, HIV testing and counseling, HIV treatment and care, risk-reduction information, education and naloxone, access to condoms, and management of sexually transmitted infections, TB, and viral hepatitis (WHO, 2018).

The seventh prevention strategy is the elimination of mother-to-child transmission of HIV, which can occur during pregnancy, labor, delivery or breastfeeding (WHO, 2018). However, mother-to-child transmission can be prevented almost entirely if both the mother and the baby start ARV drugs during early pregnancy and breastfeeding (WHO, 2018). Several social and cultural factors influence the likelihood someone will use any of these strategies discussed above.

2.4 THE SOCIAL CONTEXT OF HIV TESTING AND COUNSELING IN UGANDA TODAY

Currently, 1.2 million adults are living with HIV/AIDS in Uganda; and 750,000 of those are women (UNAIDS, 2018). The global prevalence of HIV in 2017 was 0.8 per 1,000 persons compared to Uganda's prevalence of 5.9 per 1,000 (UNAIDS, 2018). Uganda has been steadily making progress towards the UNAIDS 90-90-90 targets; 81 percent of those living with HIV know

their status, 89 percent who are HIV positive are on ARTs and 78 percent have reached viral suppression (UNAIDS, 2018). Despite these improvements, HIV/AIDS was the second leading cause of death in Uganda in 2017 (IHME, 2017).

Based on the socioecological model, social and cultural factors, along with organizational factors influence an individual's choice to seek voluntary HIV testing and care. This section, explores two sociocultural factors, stigma and gender, and the role they have in the likelihood that someone will seek voluntary HIV testing in Uganda today.

2.4.1 Stigma

Stigma is a major barrier to people voluntarily seeking HIV testing and counseling. In a study by Bajunirwe et al. (2018) assessing factors influencing utilization of HIV services in Uganda, one participant stated, "HIV is a feared disease in our community. People do not want to test for HIV, and those who have tested and found themselves positive have refused to start treatment...I think the main reason for not wanting to test for HIV or to start treatment is that the people do not want others to know they are HIV positive" (p. 6).

Another study Ayiga, Nambooze, Nalugo, Kaye, and Katamba, (2013) in Uganda found that people are more likely to uptake HTC services if they expressed the least stigmatizing attitudes. Stigmatizing attitudes were classified as least stigmatizing or highly stigmatizing based on seven statements. These seven statements included themes of self-blame, shame, rejection by family, and discrimination. In this study Ayiga et al. (2013), men were 2.13 times more likely, and women were 3.01 times more likely to use testing and counseling services if they expressed the

least stigmatizing attitudes compared to those who expressed highly stigmatizing attitudes. In the sample of 320 people, 18percent expressed highly stigmatizing attitudes, which was significantly associated with gender (12.2 percent were men, 6.2 percent were women) (Ayiga et al., 2013). Other significant predictors of use of HTC services included having at least a secondary education, working in the informal sector (work that is not monitored or regulated by the government), ever being married, having been previously tested, age and sex (Ayiga et al., 2013). For women, having a single partner and age are predictors of HTC, and women aged 25-35 were most likely to have participated in HTC. For men use of HTC is lower among those 15-24 years old and those who have never used condoms before (Ayiga et al., 2013).

Eliminating HIV-related stigma and discrimination is one of the aims of the UNAIDS 90-90-90 target, and many hoped that with the roll-out of ART, stigma would decline (Bonnington et al., 2017). However, the Bonnington et al. (2017) study found evidence of a stigma paradox for people living with HIV (PLHIV). PLHIV were viewed as less burdensome once they began ARTs, which led to a reduction in self-stigmatization for example, shame or guilt, and increased social support (Bonnington et al., 2017). Nevertheless, new sources of stigma have heightened fears of sexual transmission, moral outrage, and blaming the PLHIV for being irresponsible (Bonnington et al., 2017). Stigma related barriers to HIV care and treatment include fear of gossiping or being the subject of gossip, lack of privacy and confidentiality at clinics which fuels gossiping, and fear of disclosing one's status to a partner (Bonnington et al., 2017). Some women fear that disclosing their status to their partner will result in intimate partner violence (IPV) or being shamed and labeled as promiscuous. One prevailing belief is that if the female in a heterosexual couple is HIV negative then so is the male. Bonnington et al. (2017) found that among serodiscordant couples, men often absolve themselves of responsibility of potentially bringing HIV into the relationship.

A Russell et al. (2016) study of stigma at the TASO Entebbe clinic found that ART roll-out has not eliminated the underlying structural causes of stigma. The study evaluated the outcomes of the counseling program on self-stigma and enacted stigma. Self-stigma was defined as the fear of gossip and the effect that visible side effects of ART such as darkened skin and nails or a change in body shape have on one's sense of self-worth and dignity within the community. Enacted stigma was defined as the fear of rejection and the fear of one's status being used against you (Russell et al., 2016). Participants began counseling after their initial HIV test and before the initiation of ART. The program reframes HIV as a normal chronic disease, emphasizing that an HIV diagnosis is not a death sentence and is normal due to its high prevalence.

Reconceptualizing being HIV positive encouraged resilience by giving participants the perspective that they as an individual and as a group are knowledgeable and responsible because they sought HTC and care (Russell et al., 2016). Participants reported having higher levels of self-esteem as their physical health and appearance improved while taking ARTs. Participants experienced a decline in self-stigma as they were more able to do daily activities such as work or caring for children independently. Being able to work was especially important for men, who took pride in their physical strength and other ideas of masculinity; for women, self-stigma declined as they were able to provide for their families. The counseling program did not affect the anticipation of enacted stigma. Some decided to go to the hospital after finding out their HIV status instead of receiving care at TASO because going to TASO was seen as a public statement of one's HIV status (Russell et al., 2016). Non-disclosure of one's HIV status was common among both men and women, although for different reasons. Men feared to be the subject of gossip and not being seen as a man, which was defined as being physically strong or being able to provide for his family. Women feared being rejected by their partners, being blamed for their HIV status, and being

viewed as promiscuous or a prostitute. The fear of stigma which women face is only one form of gender inequalities which exist for women regarding HIV/AIDS in Uganda.

2.4.2 Gender Inequalities

The gender disparity in the HIV prevalence rate is apparent at an early age across Sub-Saharan Africa, as young women 15-24 years old are more than twice as likely as young men of the same age to become newly infected with HIV (Sia et al., 2016). Gender inequalities can be attributed to a host of factors: (1) the lower socio-economic status of women, (2) the power dynamics within a relationship, (3) cultural factors such as the preference by older men (who are more likely to be HIV-infected) to have younger female partners, (4) social norms condoning violence against women, and (5) the biological factors which predispose women to increased risk of HIV infection (Sia et al., 2016).

Limited control over resources can contribute to a woman's ability to protect herself against HIV (Sia et al., 2016). Generally, women who are unemployed face poorer job prospects than unemployed men. Consequently, unemployed women are more economically dependent on their male partners. Underemployment also increases women's dependence on male partners, predisposing women to transactional sex. These sexual exchanges often occur with casual sex partners and without protection. Economic inequality can increase a woman's vulnerability to an HIV infection (Sia et al., 2016).

Unequal power dynamics in a relationship and the subordinate position of women in society place women at greater risk of contracting HIV (Sia et al., 2016). Due to their subordinate position, women face challenges negotiating condom use and other safe sex practices. Cultural factors such as older men's (who are more likely to be HIV-infected)

preference for younger female partners and violence against women further limit women's decision-making and negotiating power. Violence against women is a cultural norm; one study (Francisco et al., 2013) found 73 percent of women and 57 percent of men believe that wife beating is acceptable behavior. Violence against women is associated with a lack of condom use and traumatic injury, which increase the risk of contracting HIV (Sia et al., 2016).

Women are at an increased risk of HIV infection in part because of biological factors (Sia et al., 2016). First, during sexual intercourse women have more mucosal surface area exposed to infectious fluid for longer periods than men. Second, women are at an increased risk if they have a concurrent sexually transmitted infection. Many sexually transmitted infections can be dormant and are asymptomatic; therefore, the woman is unaware that she has a sexually transmitted infection (STI) and the STI goes untreated. Third, women have a window of vulnerability after ovulation that increases the potential for infection in the female reproductive tract. The combination of these factors makes male-to-female transmission more biologically efficient and increases the risk of HIV transmission.

The *Uganda Demographic Health Survey, 2016* (Uganda Bureau of Statistics, 2018) found that 85 percent of women and 73 percent of men ages 15-49 have been tested for HIV. Rates of voluntary HTC in the past 12 months before the survey rose for both men, from 10-47 percent and women, from 12-55 percent. In 2017, over 95 percent of pregnant women in Uganda received HTC services (UNAIDS, 2017). While women more often get tested for HIV than men, many women do not disclose their status to their partner for fear of intimate partner violence and separation (Bajunirwe et al., 2018). Bajunirwe et al. (2018) found that it was common across Uganda for couples not to know each other's status.

Women who experience IPV are less likely to engage in preventative HIV behaviors for fear of being beaten (Karamagi, Tumwine, Tylleskar, & Heggenhougen, 2006; Osinde, Kaye, &

Kakaire, 2011). Women who experience IPV are at an increased risk of HIV due to several factors, including higher levels of violent sexual intercourse, riskier sexual behavior and higher rates of HIV among men who commit IPV (Osinde et al., 2011). According to focus groups in the Karamagi et al. (2006) study, men generally react violently when women attempt to get tested, disclose their HIV status, or negotiate condom use. Men in the focus groups stated that HIV preventative behaviors are proof of prostitution and positive HIV status (Karamagi et al., 2006). Gottert et al. (2018) concluded that men were likely to get tested themselves, not for prevention purposes but rather to validate the continuation of their current sexual practices.

Having multiple sex partners is a common practice in Uganda and increases the risk of HIV transmission. Two percent of women ages 15-49 and 21 percent of men reported having multiple sexual partners in the past 12 months (Uganda Bureau of Statistics, 2018). Fifteen percent of women with multiple sex partners reported having sex with someone who was not their husband or did not live with them (Uganda Bureau of Statistics, 2018). Thirty-seven percent of women with multiple partners reported using a condom during their last sexual intercourse (Uganda Bureau of Statistics, 2018). Women having multiple sexual partners is more common in urban (19 percent) than rural (13 percent) areas, and women in urban areas were more likely to have used a condom compared to those in rural areas (43 percent vs. 34 percent respectively) (Uganda Bureau of Statistics, 2018).

On the other hand, 22 percent of men with more than one sexual partner used a condom in their last sexual intercourse (Uganda Bureau of Statistics, 2018). Condom use increased to 57 percent during the last sexual intercourse if their partner was not their wife or did not live with

them (Uganda Bureau of Statistics, 2018). Men ages 15-19 were less likely than older men to have more than one partner (7 percent vs. 25 percent respectively) (Uganda Bureau of Statistics, 2018). Younger men were more likely to use a condom during their most recent sexual intercourse than older men (52 percent to at most 38 percent of older men) (Uganda Bureau of Statistics, 2018).

Gottert et al. (2018) found that men explicitly sought out younger women (ages 15-24) as partners because younger women could be more easily controlled and showed the men greater care and respect. These relationships with younger women were presumed to be short-term and possibly extramarital. Gottert et al. (2018) found a pattern of multiple long-term relationships that are fluid and complex. A man may test with one partner to stop using condoms with her, but not test or not have recently been tested with other partners (Gottert et al., 2018). Deciding to get tested for HIV is dependent on many factors including the availability, accessibility, and social support. To better understand what HIV testing and counseling services are available in Uganda a search of the relevant literature was conducted.

3.0 REVIEW OF RELEVANT LITERATURE

This section will outline gaps in the HIV/AIDS continuum of care in Uganda, the three most common HTC intervention strategies, and the need for HTC among adolescents and young adults. To evaluate the current landscape of HTC programming offered in Uganda and the barriers and facilitators for adolescents and young adults in utilizing HTC services, a targeted literature search was conducted. Sources were accessed through online search engines including PubMed, Google Scholar, Google, and the University of Pittsburgh's online library catalog (Pittcat).

As discussed above, Uganda's approach to HIV/AIDS has been conducted under an umbrella framework within the government, and NGOs and other non-state actors have been responsible for the implementation of HIV services along the continuum of care. The HIV/AIDS care system is decentralized, and gaps in coverage exist (Bajunirwe et al., 2016). For example, individuals who test HIV positive face challenges in linking to care. Gaps in coverage occur in part because the referral system is fragmented and there is a lack of communication and coordination (Bajunirwe et al., 2016). Likewise, few integrated services such as HIV/AIDS and TB services are provided due to a lack of service delivery policies, guidelines on integration of services, and staffing. Bajunirwe et al. (2016) note that those populations most at risk are mobile populations, commercial sex workers, fishing communities, internally displaced peoples, uniformed services, injection drug users, and persons with disabilities and who are not reached by preventative HIV services. The limited community-level services and supports that exist do not

cover the full continuum of care. For instance, if an individual has home-based HIV testing, there is often a lack of follow-up care (Bajunirwe et al., 2016).

Voluntary HTC, prevention of mother-to-child transmission, and voluntary medical male circumcision are the three prevention strategies that have recently been scaled up throughout the country (Bajunirwe et al., 2016). Current HIV testing strategies in Uganda include facility-based and home-based testing. Several barriers exist to accessing HTC services, including the distance that the individual is required to travel, services offered at inconvenient times, fear of stigma, lack of privacy, and a shortage of health care staff (Bajunirwe et al., 2018).

Many facility-based testing sites are in stand-alone HIV clinics similar to TASO in Entebbe. Stand-alone clinics are meant to provide specialized care with ART-proficient health workers (Zakumumpa et al., 2018). Stand-alone clinics provide more knowledgeable staff and more specialized laboratory and diagnostic testing compared to the hospitals and general health clinic. Zakumumpa et al. (2018) conducted a study evaluating why stand-alone HIV clinics in Uganda are the primary providers for HIV testing and treatment. They concluded that the stand-alone clinics arose during the phase of national ART roll-out between 2004 and 2008.

Public out-patient clinics cannot handle the escalating HIV patient volumes since the roll-out of ART (Zakumumpa et al., 2018). Likewise, international funding, namely the United States Presidential Emergency Fund for AIDS Relief (PEPFAR), has perpetuated the stand-alone facility-based testing model (Zakumumpa et al., 2018). Some clinics like TASO have an outreach team that provides medical and counseling treatment to patients in the communities surrounding the clinic for those who cannot travel to the clinic (TASO, 2018). However, clinic-sponsored outreach programs do not include community HTC (TASO, 2018).

Home-based HIV counseling and testing (HBHTC) is an alternative to the healthcare facility-based model. HBHTC has been shown to increase testing, curb risky sexual behavior,

address the cost of transportation, and reduce potential stigma (Sekandi et al., 2011). The sample for the Sekandi et al. (2011) study was 588 urban residents, of whom 408 (69 percent) accepted HBHTC (Sekandi et al., 2011). The high acceptance rate among urban populations is consistent with other studies in Kenya (78%) (Irungu et al., 2008) and Zambia (71%) (Mutale et al. 2010). Acceptance rates of HBHTC are even higher in rural areas (84% to 98%) (Sekandi et al., 2011). Those who have had an HIV test previously were more likely to accept HBHTC compared to those who have not been tested (58% vs. 85%) (Sekandi et al., 2011).

The high operational costs and a shortage of trained health professionals can be barriers to successfully implementing an HBHTC program (Sekandi et al., 2011). Therefore, these authors recommended training community health workers to administer the rapid HIV tests under the supervision of a medical professional. Another limitation of the HBHTC method is that less than one-third of individuals who test as HIV positive in HBHTC are linked to care (Ruzagira, Grosskurth, Kamali, & Baisley, 2017). Ruzagira et al. (2017) found that after one counseling session participants were twice as likely and after two counseling sessions five times as likely to link to care when compared to those who did not receive counseling. The authors suggest that counseling be included in HBHTC services and HBHTC services should be scaled up (Ruzagira et al., 2017).

The major gap in HTC services under the facility-based and home-based HIV testing models is the lack of community-based service providers (Bajunirwe et al., 2018). Community-based programming has several benefits. Having an HTC program in community-based organizations increases access to services by decreasing the distance of travel required (Bajunirwe et al., 2018). Community-based programs have been shown to reach more first-time testers and more HIV positive persons with high CD4 counts, and are highly accepted by communities while providing better links to care (Smith et al., 2015).

A Barnabas et al. (2014) study in KwaZulu-Natal, South Africa, and Mbarara, Uganda, evaluated a community-based HIV testing program. The program had five components: (1) home-based testing, (2) point-of-care CD4 cell count testing, (3) referrals to local HIV clinics, (4) counseling by peers, and (5) follow-up using a mobile phone (Barnabas et al., 2014). Ninety-six percent of adult residents in the communities were tested. Nineteen percent of the participants were newly diagnosed as HIV positive. Of those who tested HIV positive 97 percent were linked to HIV care within 12 months (Barnabas et al., 2014). Similarly, Govindasamy, Ford, and Kranzer (2012) found that community-based care reduced several barriers to linking to care such as reduced transportation costs; mobile clinics allowed for CD4 cell count monitoring, provided a medication dispensary and increased community support of people living with HIV through patient support and empowerment programs (Govindasamy et al., 2012). Community-based programs can provide programs targeted towards youth, and young adults may be better positioned to address the issues of stigma within the community (Bajunirwe et al., 2018).

3.1 TARGET POPULATION: ADOLESCENTS

Currently, Uganda as in many Sub-Saharan countries is experiencing a youth bulge. The youth bulge is the result of a decline in child mortality and a slower decline in fertility rates that leads to children and young adults being a large proportion of the population (UNAIDS, 2018b). As the overall population of adolescents increases and level services remain the same the capacity of the health care system decreases, leaving more young people at risk of acquiring new HIV infections (UNAIDS, 2018b). Approximately 290,000 new infections occurred in eastern and

southern Africa in 2017 (UNAIDS, 2018b). Two out of three of new HIV infections occurred in young women (UNAIDS, 2018b).

In 2018, 69 percent of the population in Uganda was under 25 years old (Central Intelligence Agency, 2018). The HIV prevalence rate ranges from 1.1 percent among 15-19-year old to 3.3 percent among 20-24 years old, indicating new infections are a concern for these age groups (Ministry of Health, 2017; WHO, 2018). Also, the current programs generally do not provide youth-friendly testing and treatment (Bajunirwe et al., 2018). Therefore, it is vital to have programming that serves the adolescent and young adult population.

Currently, fewer than half of Ugandan adolescents have comprehensive knowledge of HIV/AIDS, 46 percent of among young women and 45 percent of young men (Uganda Bureau of Statistics, 2018). The *Uganda Demographic Health Survey, 2016* measured comprehensive knowledge as consistently using condoms during sexual intercourse, having one uninfected faithful partner, knowing a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about HIV transmission (Uganda Bureau of Statistics, 2018). Comprehensive knowledge is increasing among both young men and women, up from 38 to 45 percent in 2011 to 2016 (Uganda Bureau of Statistics, 2018). Comprehensive HIV knowledge also increases with age, higher levels of education and is more prevalent among adolescents in urban areas (Uganda Bureau of Statistics, 2018). In urban areas across Uganda, 55 percent of young women and 56 percent of young men have comprehensive knowledge of HIV compared to the national averages of 46 and 45 percent (Uganda Bureau of Statistics, 2018).

Nationally, voluntary HTC has increased over the past several years (Uganda Bureau of Statistics, 2018). Sixty-seven percent of women aged 15-24 and 50 percent of men aged 15-24 who had sexual intercourse in the preceding 12 months were tested and received their results

(Uganda Bureau of Statistics, 2018). The proportion of adolescents who received testing has increased substantially over the past ten years from 17 to 67 percent among young women and 13 to 50 percent among young men (Uganda Bureau of Statistics, 2018). For young men having ever been married increased the likelihood of testing: 60 percent of married men and 45 percent of never been married men had been tested (Uganda Bureau of Statistics, 2018). For young women the difference between those who had ever been married or never been married and had been tested was not as large, 69 percent among married women and 64 percent among never been married women (Uganda Bureau of Statistics, 2018).

Adolescents face specific barriers to HTC. These challenges include accessing, negotiating use of and adhering to the correct use of HIV interventions (Kasedde Susan 2013; Uganda Bureau of Statistics, 2018). Kasedde et al. (2013) note that community mobilization and changes to the legal and policy environment are facilitators to the uptake of programs and intervention by adolescents.

Kadede et al. (2016) provided an HIV mobile testing program for adolescents. The program was implemented across 32 communities in southwestern Uganda, eastern Uganda, and western Kenya. HIV testing was incorporated into a two-week multi-disease community health campaign. For those who did not come to the community events, home-based testing was provided. Eighty-eight percent of all adolescents received HIV testing through the program. Eighty-two percent of those who were tested did so during the community health campaigns, and the remaining 18 percent were tested at home. Ninety-one percent of early adolescents (ages 10-14), 74 percent of mid-adolescents (ages 15-17) and 45 percent of late adolescents (ages 18-24) claimed never having an HIV test before the program. Of those who tested HIV positive, 57 percent reported being unaware of their status before testing, and 51 percent never reported previously being tested. Kadede et al. (2016) suggested that multi-disease testing may reduce anticipated stigma by

providing access to HTC while reducing the concern of being labeled as sexually active or HIV positive. Also, this strategy provides a platform for other prevention services including sexual education, condom distribution, PrEP, and linking to HIV services (Kadede et al., 2016). Considering the discussion above, adolescents and young adults need to have access to community-based testing.

4.0 PROGRAM PLAN

This section will outline a pilot program plan for a community-based program for adolescents and young adults at the local non-profit Bright Kids Uganda (BKU) in Kisubi, Uganda. Kisubi is a peri-urban area situated between two major cities, Kampala, the nation's capital, and Entebbe in the central region of Uganda. The HIV prevalence rate for the central region is the highest in the country at 8.0 percent (Ministry of Health, 2017). The prevalence rate of HIV in Kampala is 6.9 percent (Ministry of Health, 2017).

In 2009, approximately 42,500 people were living in the sub-district where Kisubi is located (Wakiso Government, 2009). According to Victoria Nolongo Namusisi, the founder of BKU, the rate of new cases is increasing for several reasons (personal communication, 6/1/2018). First, people are not getting tested, especially young men. Second, males assume that if their female partners are tested and found negative, then they are also HIV negative. Third, transportation to travel the 10km to Entebbe to get tested is too expensive. Fourth, stigma and fear around getting tested still exist.

Bright Kids Uganda was established in 2000, by Victoria Nolongo Namusisi as a children's home. The organization provides long-term housing for orphaned, abandoned and neglected children, education and job training, and medical care. (Bright Kids Uganda, 2014). In 2000 Namusisi was serving as Chief Commissionaire for Scouts in Uganda when she took to scouting to the streets of Kampala. From her experience of working with street children, she decided to start a children's home for orphaned and vulnerable children. BKU sustains itself through several social

entrepreneurial programs including a bed and breakfast, a farm, a corner store, and a micro-credit program for which BKU is a lending institution for small business development in the community. In 2010, the Gloria Namusoke Memorial medical clinic was built on site and provides the children with basic medical services. Namusisi hopes to expand the capacity of the clinic to serve the community (personal communication, 6/1/2018). One way for the clinic to serve the broader community is through a pilot HIV testing and counseling program. Many in the Kisubi community face barriers to accessing HTC, especially adolescents and young adults; providing HTC services at BKU can reduce these barriers.

4.1 CHOICE OF APPROACH

The goal of the proposed pilot program is to decrease the incidence rate of new HIV infections in young adults (15-24 years old) in Kisubi, Uganda. The proposed program can help decrease the stigma that surrounds HIV by providing accessible HIV testing and counseling services and by engaging the community. Increased HIV testing and prevention education will be provided through counseling and community outreach. Prevention education provided can increase safe sexual practices, which will lead to a decrease in the incidence rate of new HIV infections.

Rapid HIV testing and counseling will be based in the well-known community-based organization BKU, which offers other community and medical services to make HIV testing more accessible and less stigmatized. The TASO center, 10km away in Entebbe, is the only HIV clinic near Kisubi that provides free testing. The center's focus is solely on preventing HIV transmission and providing care. Because it is publicly identified as an HIV provider, people are afraid to go to

the center due to fear of stigma. Placing the program in a community organization will decrease the barriers of transportation and stigma.

The CDC in the U.S. has created a set of guidelines and evidence-based practices for HIV testing and linkage programs in nonclinical settings. The guidelines apply to any population; therefore, we have selected the practices that best fit the Kisubi community. The first guideline is to target high-risk populations that are likely to have an HIV prevalence of 1 percent or more (Center for Disease Control and Prevention, 2012). The prevalence of HIV in Kisubi is similar to Kampala's rate, estimated at 6.9 percent (Ministry of Health, 2017). The prevalence rate among those aged 15 to 19 years nationally was 1.1 percent and 6.3 percent among those aged 25-29 years in 2017 (WHO, 2018). Because, adolescents are an at-risk population nationally and the adult population of Kisubi is at risk, adolescents in Kisubi are likely to be a high-risk population.

The second guideline is to offer the most sensitive HIV test that is feasible in the program (CDC, 2012). Therefore, BKU will offer rapid HIV testing. Participants who test HIV positive will be linked to medical care by connecting the patient to the TASO clinic, and a needs assessment will be used to refer participants to appropriate services for other basic needs, such as food (CDC, 2012). The following guidelines will be used for participants who test HIV-negative: (1) Participants will be classified into two categories of risk (elevated vs. not elevated) for acquiring HIV to determine which participants could benefit from intensive risk-reduction services. (2) Participants will be assessed for risk to identify factors that may influence the risk of HIV acquisition. (3) Participants will be provided with links to services identified in the needs assessment (CDC, 2012).

The proposed program will help reduce the incident rate of new HIV infection in adolescents and young adult in the Kisubi community. For this pilot project 100 young adults will be recruited from the community to receive a rapid HIV test and counseling session at BKU. To

evaluate the progress and outcomes of the testing and counseling services program short, mid and long-term objectives are outlined below.

Short-term outcomes

1. Sixty percent of young adults who come for HIV testing will show improved knowledge of HIV risk factors and prevention strategies. To assess knowledge that a participant has gained about HIV risk factors and prevention strategies during a counseling session the BKU nurse will use a teach-back method with the participant before the end of every session. A study by White et al., (2013) found the teach-back method to be an effective method to educate and assess learning. Participants in the study correctly answered 75 percent of the teach-back questions. The BKU will keep counseling notes for each participant recording what was discussed, plans to link to care if necessary, and what knowledge the participant has gained.
2. Eighty percent of HIV positive participants will have a plan to link to care. The BKU nurse will use motivational interviewing techniques to work with the participant to create a plan to link to care by the end of the session and will record the participant's plan in their counseling notes.

Mid-term outcomes

1. Ninety percent of HIV positive participants will be successfully linked to care within three months of their testing visit. To assess if an HIV positive participant has been linked to care within three months after their session the BKU staff will conduct a follow-up interview via phone.

2. Use of the HIV testing and counseling services by young adults will increase 30 percent from the end year one of the program to the end of year two. To demonstrate an increase in the use of HTC services the number of HTC sessions completed by the end of the first year of the program will be compared to the number of HTC sessions completed by the end of the second year. HTC sessions in which participants were not between the ages of 15-24 will be excluded.

Long-term outcome

1. Decrease the incidence rate of new HIV infections by 50 percent in the community by the end of five years.

Bright Kids Uganda will contract with the nonprofit Raising Voices in Kampala. Raising Voices' mission is to prevent violence against women and children (Raising Voices, 2019). Reducing gender inequalities and making power dynamics more equitable in communities and within relationships can mitigate the risk of IPV and improve the uptake of HIV testing and other preventive services.

Raising Voices was founded in 1999, to cultivate activism in communities against violence towards women and children and inspire changes in homes, schools, communities, and government (Raising Voices, 2010). The Start, Awareness, Support, Action (SASA) program, a community mobilization campaign, is Raising Voices' primary platform to advocate for an end to violence against women and children (Raising Voices, 2019). BKU will work with Raising Voices' staff to implement the SASA program to provide the community mobilization component of the proposed program at BKU.

The SASA intervention is the largest intervention in Uganda that addresses gender inequalities and power dynamics within partnerships (longer than one year) to reduce IPV and

HIV (Abramsky et al., 2014). SASA originated in Kampala only 30km away from BKU. The program, designed as a community mobilization intervention, originally involved eight women and men from the intervention communities, and selected police officers and health care workers all of whom were trained as community advocates (Abramsky et al., 2014). The campaign focused on local activism, media and advocacy, communication materials and training. Community activists conducted much of the work through their social networks, and specific intervention activities were not rigidly prescribed, allowing the program to develop according to the needs and preferences of the community (Abramsky et al., 2014). The result after three years of programming was that the relative risk of the past-year experience of IPV among women was 52 percent lower in intervention communities compared to control communities (Abramsky et al., 2016). The relative risk of men perpetrating IPV in the last year was 61 percent lower in intervention communities compared to control communities (Abramsky et al., 2016).

SASA has an evaluation plan and objectives that are separate from the proposed program at BKU. SASA will be responsible for evaluating its outcomes described below and will use the tools that have been designed specifically for each SASA phase. SASA will use its tools, including focus group guides, activity outcome tracking tool, activity reports, and rapid assessment surveys. These tools do not need to be adapted to the context because they were originally designed in the country with a comparable population.

Short-term Outcomes

1. SASA programming reaches 500 community members by the end of the year, which will be reflected in the activity reports and quarterly reports. To measure the reach of SASA programming, SASA will track the number of people,

demographics, successes, and lessons from each event. SASA has developed an activity report tool for this purpose.

2. Forty percent of attendees of any event will demonstrate an increase in knowledge about gender violence, power dynamics, and the relationship between gender-based violence and HIV. SASA will do a short pre-test survey before an event begins and a post-test survey at the end of an event. SASA will use the rapid assessment survey to measure knowledge of key indicators such as the meaning of power, men's power over women as a root cause of gender-based violence that increases the risk of HIV for women, and violence against women is a cause and consequence of an HIV infection.
3. Four focus groups will be conducted with Kisubi community members to explore attitudes about gender-based violence and power dynamics within an intimate relationship. Men and women will be separated into different groups to encourage an open dialogue.

Mid-term Objectives

1. Sixty percent of community participants at SASA events will possess skills to provide support to women experiencing violence and support to men trying to stop using violence. To assess if community members possess skills to provide support to women experiencing violence and men trying to stop using violence, SASA will use rapid assessment surveys. Rapid assessment surveys have been designed by SASA to evaluate demonstrable skills such as where to find support for balancing power within their relationship, ability to discuss benefits of non-violence with men rather than shaming and blaming men, and

ability to identify formal and informal mechanisms of support for women experiencing violence and HIV/AIDS.

2. Four focus groups with participants in SASA events will be held to evaluate how SASA has influenced attitudes about gender-based violence and gender equity in relationships. Groups will be separated by gender to facilitate open dialogue.

Questions:

- a. To what extent do community members feel they have to keep the roles society expects of them as a woman/man?
- b. How do people in the community support women and men trying to balance power in their relationship?
- c. What kind of support exists in the community for women living with violence?
- d. To what extent are people in the community who are speaking out about power, violence against women and HIV/AIDS supported? How?
- e. Are there any new strategies in our community for preventive violence? Describe.

Long-term Goals

1. Inspire community members to analyze the implications of men's power over women and the community's silence about it.
2. Encourage community members to use their power to create safer, healthier and happier relationships between women and men.

The proposed pilot program is a collaborative effort between BKU and SASA to reduce barriers that adolescents face trying to access HIV testing and counseling services. The BKU testing and counseling program is designed to appeal to young adults in several ways: (1) BKU is a trusted community organization where one goes for many reasons; thus, it can help to reduce the fear of stigma. (2) BKU is within walking distance for much of Kisubi, eliminating the transportation costs associated with traveling to the TASO clinic. Reducing the fear of stigma and transportation costs alone were enough for people to utilize similar testing services in a study conducted in Australia (Mutch et al., 2017). (3) Working with SASA to change community attitudes and build stronger relationships will encourage both young adults and couples to get tested while mitigating some of the fear disclosing one's status. Likewise, SASA will focus on prevention education. BKU itself will be one of the community advocates as part of SASA. This combination of activities can help lead to an increase in HIV testing and a reduction in the incidence of HIV among young adults.

4.2 COMMUNITY ENGAGEMENT

To engage with the community, we will primarily use Bright Kids Uganda's social network to launch the program. We will hold a kick-off picnic in conjunction with SASA, which will be open to the whole community to introduce the program and offer the SASA training for those interested in becoming a community activist. For enrollment purposes, word of mouth will be the strongest asset. Similarly, we expect the community activists under the guidance of SASA to promote HIV- testing behaviors and the BKU program as a resource. We will attract young adults into seeking voluntary HIV testing at BKU because there will be no transportation costs, the testing

will be free, they will not have to wait for results, and testing will be done in a private setting. Partnering with SASA will decrease fear and stigma around HIV testing as community attitudes change.

To receive community feedback, we will utilize BKU's social network. BKU runs several microloan groups, and each group holds a meeting at least once a month. The microloan recipients are members of the community who run small businesses. To plan and pilot the program we will hold focus group sessions with the microloan groups to provide a means of feedback.

Other community partners will include the TASO Center and the Kisubi Hospital because both entities are HIV treatment service providers. The service providers will have a vested interest in the program to assist those who test positive to be successfully linked to care. A community-based testing approach will be of interest to TASO as it will expand the impact of its programs. ASA Social Fund for Hidden People is a nonprofit funding organization, that partners with BKU on several projects and will be a partner for the pilot for this program. The University of Pittsburgh's Graduate School of Public and International Affairs and the African Studies Program are additional partners that are interested in community development projects in developing nations.

4.3 ACTIVITIES

The components of the proposed program including training, oversight, dose and key staff are described below. The roles of the key staff members are described in Figure 1.

Staff Position	Staff Member	Responsibilities
Program Coordinator	Courtney Smalt	Courtney is responsible for the planning and design of the program. She is also responsible for overseeing the implementation of the program.
Sponsor	Victoria Nulango Namuisi	Victoria is responsible for approving all decisions throughout the program.
Program Manager	ASA Social Staff	The Program Manager will be responsible for seeking other funding sources after the initial year.
Staff Nurse	Rose	Rose will be responsible for administering HIV rapid tests and providing counseling sessions to participants. Rose will also be responsible for maintaining health records and creating monthly reports.
Accountant	Paul	Paul will be responsible for administering the funds and keeping track of the budget.
Support Staff	BKU Staff	Staff will provide administrative support to the program coordinator and assist the program coordinator in planning the community kick-off event.
Intern	Intern	The intern will assist the program coordinator throughout the implementation of the program.

Figure 1 Key Staff

Before traveling to Uganda, the program coordinator will take online training about non-clinical HV testing and counseling programming offered through the CDC. The nurse and intern will receive the same online course in Uganda in early May. Upon completion of this course the nurse, intern, and program coordinator will all be certified HIV testers/counselors.

The program coordinator is responsible for supervising the planning and implementation phases of the project, including training, recruitment and monitoring activities. The program coordinator will dedicate 50 percent of her time during the planning phase and 100 percent of her time during the implementation phase. The staff nurse is responsible for executing testing,

counseling sessions, and data collection and will invest 30 percent of her time in conducting the HTC sessions. The program manager at ASA will be responsible for monitoring and evaluation of the program and commit 30 percent of their effort to this project.

The participants will have at least one exposure to prevention education and community resource materials during their counseling session. The primary output will be at least one HIV test. We anticipate 20 percent of participants to receive two testing and counseling sessions per year.

4.4 SUSTAINABILITY

The partnership between BKU and SASA will help to ensure the continued availability of HIV testing services as stigma decreases and testing behaviors become normalized throughout the community. The relationship between BKU and ASA Social Fund for Hidden Peoples is critical to institutionalizing the program at BKU. ASA's primary role has been to support BKU's enterprises to make BKU more financially sustainable and to find other funding streams when necessary. For the program to be institutionalized the costs of the testing kits and the BKU Nurse's time will need to be covered under the BKU clinic's budget. As the program progresses the program coordinator and the executive director of BKU will work with medical testing suppliers in Uganda to establish a supply chain to ensure that tests will be available. The continuation of the HIV testing program at BKU will depend on the strength of its partnerships.

4.5 REPORTING

Reporting will consist of reports and regular meetings with the staff, stakeholders, and the community process measures will be summarized into a monthly report by the BKU nurse and SASA and disseminated to all partners. The SASA team and BKU and ASA Social Fund staff will meet twice a month to discuss the progress of the project and what needs to be adjusted. Quarterly meetings with all partners and community members will be held to present an overview of key activities, successes, challenges and receive feedback from the community. SASA will submit a report at the end of each phase to summarize the activities, lessons learned and the outcomes of the phase, and distributed to all stakeholders. Copies of the SASA phase reports will be available to community members at the quarterly meetings.

This project is unique, as HIV testing and counseling in non-clinical settings has not been used in Uganda, and SASA has not partnered with an HIV testing clinic in the past. Findings from the combination of these programs and services will be of interest to the HIV/AIDS, public health, and international development communities. Therefore, the program manager, the executive director of BKU, and the program manager from SASA will collaborate to write a report that will be submitted to Uganda's Ministry of Health, PEPFAR, The Global Fund, USAID, UKAID, and the CDC.

5.0 CONCLUSION

The response to the global HIV epidemic generated ideas, standards and the eight prevention strategies that are used worldwide. These global strategies, however, are not implemented the same way in every nation. To appreciate the current political and social environment in which HIV testing and counseling programs exist in Uganda it is critical to know the history of Uganda's response to HIV since the beginning of the epidemic. The Ugandan government's approach includes providing policy and guidelines, to financially support NGOs who deliver HIV services. Two sociocultural factors that affect the use of testing and counseling services are stigma and gender inequalities. Other barriers to HIV testing and counseling services such as accessibility, distance, and privacy also exist.

In light of the current political and social context in Uganda a review of the relevant literature regarding testing and counseling programs was conducted. The review of the literature outlined Uganda's current HIV testing and counseling practices and programs and gaps in the HIV continuum of care. Finally, a pilot program was proposed to address the gaps in community-based programming in Kisubi, Uganda. The pilot program is a collaboration between BKU and SASA to provide HTC services and reduce barriers for adolescents and young adults seeking HIV testing and counseling in Kisubi.

This paper has some limitations. First, the review of relevant literature is not a systematic review. This strategy excluded a lot of research about other populations in Uganda and generally. The literature review also did not examine a wide range of HIV programs, including couples testing

programs. Linking to care was identified as a challenge in much of the literature. The proposed pilot program will not examine barriers to linking HIV positive participants to care. Lastly, the proposed program is designed as a pilot and did not extensively focus on the sustainability of the program after one year. Future work will have to include developing a long-term funding mechanism for the program to be sustainable.

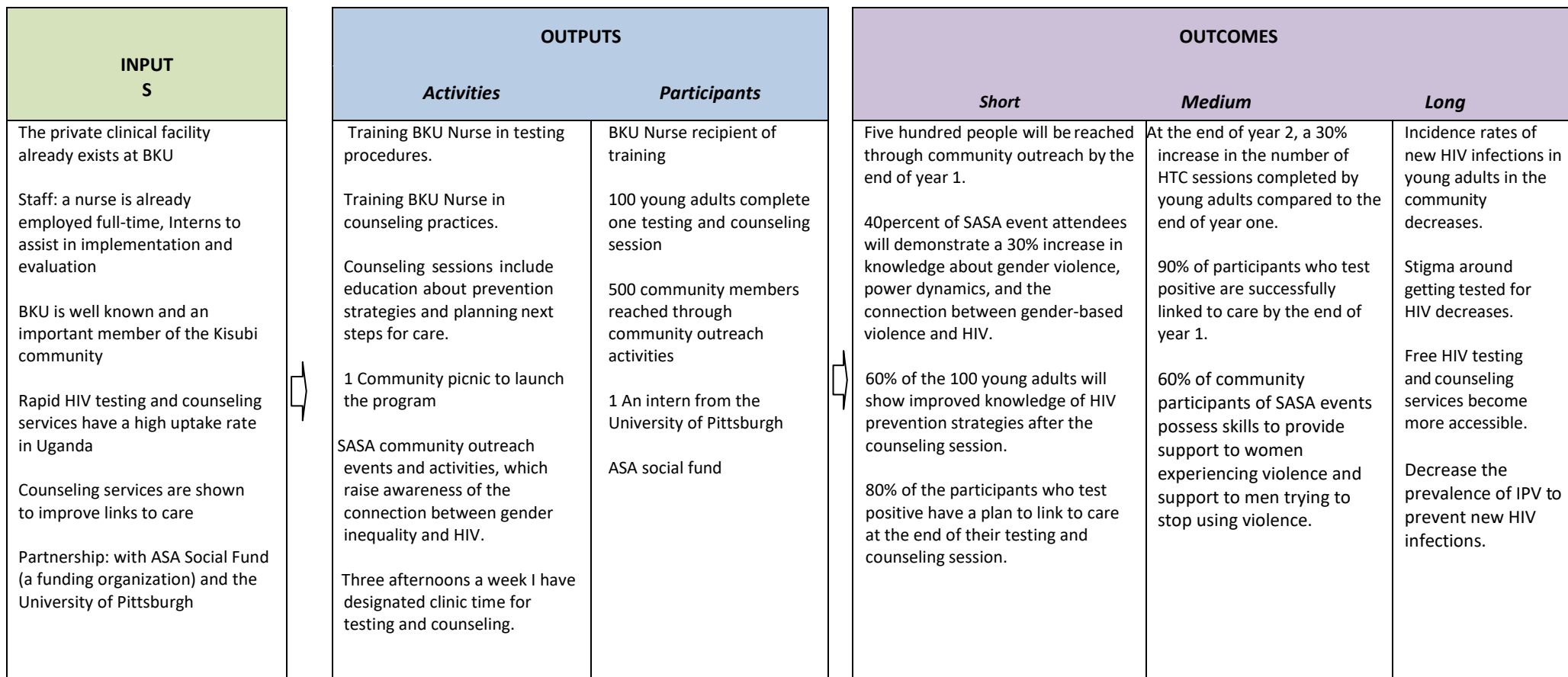
Ensuring that every person knows their HIV status is critical to addressing the HIV epidemic. However, many in Kisubi, Uganda, face barriers to accessing HIV testing and counseling services. The purpose of the proposed program is to reduce the barriers which adolescents and young adults in the Kisubi community face when trying to access HIV testing and counseling. Structural barriers such as the distance to an HIV testing site and times at which the clinics offer HTC services are only one type of challenge. Others include stigma, gender-inequalities and a lack of youth-oriented programs. The proposed program seeks to reduce these barriers by offering community-based HTC services at a trusted youth-focused local organization, and through a community-led advocacy campaign for equitable relationships.

HTC services are critical to controlling HIV/AIDS because HTC often serves as a gateway to other HIV prevention and treatment resources. HTC is an important avenue to provide comprehensive knowledge about HIV, prevention strategies, and treatment options. Similarly, HTC is often the first step to linking to appropriate care services. Counseling can help the individual testing, to accept their status, and to assist them in disclosing their status to current and future partners. In other words, the proposed pilot program will facilitate the global strategies being used to address the HIV epidemic.

To end the HIV epidemic by 2030 we need to make changes in the delivery of HTC services and all HIV prevention tools to ensure adolescent and young adult health, especially in Sub-Saharan Africa. Future programs must address sociocultural barriers to accessing HIV

services particularly stigma and gender inequality in addition to the provision of services. The following statement by the WHO's Special Program is as true today as it was in 1987, that the response to HIV/AIDS will require "unprecedented energy, creativity, and resources" (Mann, 1987 p.733).

Problem Statement: The incidence rate of new HIV infections in Kisubi, Uganda are increasing, especially among young adults (15-24 years old).



Assumptions/Theoretical Constructs

- Housing the program in BKU which provides other services will help participants to overcome the barrier of stigma.
- Providing testing and counseling in the community will reduce the transportation barrier.
- Providing counseling services will help participants who test positive to be linked to care.
- Reducing barriers to testing services will increase the number of people who seek testing.

External Factors

- Stigma, those who experience less stigma are more likely to use testing and counseling services.
- Gender, women of reproductive age are more likely to interact with the health system. The prevalent assumption by men, if their female partner test negative then their status is also negative.
- HIV testing and treatment is free at public clinics.
- Only one public clinic in Entebbe 10Km away, therefore transportation is a barrier

Figure 2 Logic Model

BIBLIOGRAPHY

- Abramsky, T., Devries, K., Kiss, L., Nakuti, J., Kyegombe, N., Starmann, E., . . . Watts, C. (2014). Findings from the SASA! Study: a cluster randomized controlled trial to assess the impact of a community mobilization intervention to prevent violence against women and reduce HIV risk in Kampala, Uganda. *BMC Med*, *12*, 122. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/25248996>. doi:10.1186/s12916-014-0122-5
- Abramsky, T., Devries, K. M., Michau, L., Nakuti, J., Musuya, T., Kiss, L., . . . Watts, C. (2016). Ecological pathways to prevention: How does the SASA! Community mobilization model work to prevent physical intimate partner violence against women? *BMC Public Health*, *16*, 339. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27084116>. doi:10.1186/s12889-016-3018-9
- Agency, C. I. (2018, 7/1/2018). The World Factbook Retrieved from <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/ug.html>
- AVERT. (2018, 11/26/2018). History of HIV and AIDS Overview. Retrieved from <https://www.avert.org/professionals/history-hiv-aids/overview>
- Ayiga, N., Namboozee, H., Nalugo, S., Kaye, D., & Katamba, A. (2013). The impact of HIV/AIDS stigma on HIV counseling and testing in a high HIV prevalence population in Uganda. *Afr Health Sci*, *13*(2), 278-286. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/24235925>. doi:10.4314/ahs.v13i2.12
- Bajunirwe, F., Tumwebaze, F., Abongomera, G., Akakimpa, D., Kityo, C., & Mugenyi, P. N. (2016). Identification of gaps for implementation science in the HIV prevention, care and treatment cascade; a qualitative study in 19 districts in Uganda. *BMC Res Notes*, *9*, 217. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27074947>. doi:10.1186/s13104-016-2024-4
- Bajunirwe, F., Tumwebaze, F., Akakimpa, D., Kityo, C., Mugenyi, P., & Abongomera, G. (2018). Towards 90-90-90 Target: Factors Influencing Availability, Access, and Utilization of HIV Services-A Qualitative Study in 19 Ugandan Districts. *Biomed Res Int*, *2018*, 9619684. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/29750175>. doi:10.1155/2018/9619684
- Barnabas, R. V., van Rooyen, H., Tumwesigye, E., Murnane, P. M., Baeten, J. M., Humphries, H., . . . Celum, C. (2014). Initiation of antiretroviral therapy and viral suppression after home HIV testing and counseling in KwaZulu-Natal, South Africa, and Mbarara district, Uganda: a prospective, observational intervention study. *Lancet HIV*, *1*(2), e68-e76. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/25601912>. doi:10.1016/S2352-3018(14)70024-4
- Bonnington, O., Wamoyi, J., Ddaaki, W., Bukonya, D., Ondenge, K., Skovdal, M., . . . Wringe, A. (2017). Changing forms of HIV-related stigma along the HIV care and treatment

- continuum in sub-Saharan Africa: a temporal analysis. *Sex Transm Infect*, 93(Suppl 3). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/28736394>. doi:10.1136/sextrans-2016-052975
- Bright Kids Uganda. (2014). Bright Kids Uganda About Us Retrieved from <http://brightkidsuganda.net/about-us/>
- Centers for Disease Control and Prevention. (2012). *Planning and implementation guide for HIV-testing and linkage programs in non-clinical settings: a guide for program managers*. Retrieved from
- Coutinho, A., Roxo, U., Epino, H., Muganzi, A., Dorward, E., & Pick, B. (2012). The expanding role of civil society in the global HIV/AIDS response: what has the President's Emergency Program For AIDS Relief's role been? *J Acquir Immune Defic Syndr*, 60 Suppl 3, S152-157. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22797737>. doi:10.1097/QAI.0b013e31825d0383.
- Francisco, L., Abramsky, T., Kiss, L., Michau, L., Musuya, T., Kerrigan, D., . . . Watts, C. (2013). Violence against women and HIV risk behaviors in Kampala, Uganda: baseline findings from the SASA! Study. *Violence Against Women*, 19(7), 814-832. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23955928>. doi:10.1177/1077801213497557
- Global Fund. (2019, June 2018). Global Fund Overview Retrieved from <https://www.theglobalfund.org/en/overview/>
- Gottert, A., Pulerwitz, J., Siu, G., Katahoire, A., Okal, J., Ayebare, F., . . . Mathur, S. (2018). Male partners of young women in Uganda: Understanding their relationships and use of HIV testing. *PLoS One*, 13(8), e0200920. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/30096147>. doi:10.1371/journal.pone.0200920
- Government, W. D. (2009). *Implementation of the community information system Wakisio District local government report based on CIS summary results 2009*. Retrieved from http://www.ubos.org/onlinefiles/uploads/ubos/2009_HLG_%20Abstract_printed/CIS+U P LOADS/CIS%20summary%20reports/Wakiso.pdf
- Govindasamy, D., Ford, N., & Kranzer, K. (2012). Risk factors, barriers and facilitators for linkage to antiretroviral therapy care: a systematic review. *AIDS*, 26(16), 2059-2067. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22781227>. doi:10.1097/QAD.0b013e3283578b9b
- Harm Reduction International. (2019). What is harm reduction? Retrieved from <https://www.hri.global/what-is-harm-reduction>
- Harvard University Initiative for Global Health. (2006). Global Health Challenges Social Analysis 76: Lecture 7 In.
- Institute of Health Metrics and Evaluation. (2017). Health Data Uganda
- Irungu, T. K., Varkey, P., Cha, S., & Patterson, J. M. (2008). HIV voluntary counselling and testing in Nakuru, Kenya: findings from a community survey. *HIV Med*, 9(2), 111-117. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/18257773>. doi:10.1111/j.1468-1293.2007.00538.x
- Kadede, K., Ruel, T., Kabami, J., Ssemmondo, E., Sang, N., Kwarisiima, D., . . . team, S. (2016). Increased adolescent HIV testing with a hybrid mobile strategy in Uganda and Kenya. *AIDS*, 30(14), 2121-2126. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27258399>. doi:10.1097/QAD.0000000000001180

- Karamagi, C. A., Tumwine, J. K., Tylleskar, T., & Heggenhougen, K. (2006). Intimate partner violence against women in eastern Uganda: implications for HIV prevention. *BMC Public Health*, 6, 284. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/17116252>. doi:10.1186/1471-2458-6-284
- Kasedde Susan, C. L., Craig McClure, Upjeet Chandan. (2013). Reducing HIV and AIDS in Adolescents: Opportunities and Challenges. *Curr HIV/AIDS Rep*, 10, 159-168. doi:10.1007/s11940-013-0159-7
- Mann, J. M. (1987). The World Health Organization's global strategy for the prevention and control of AIDS. *West J Med*, 147(6), 732-734. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/3433760>.
- Merson, M. (2006). Uganda's HIV/AIDS Epidemic: Guest Editorial. *AIDS Behav*, 10, 333-334. doi:10.1007/s10461-006-9120-8
- Mutale, W., Michelo, C., Jurgensen, M., & Fylkesnes, K. (2010). Home-based voluntary HIV counselling and testing found highly acceptable and to reduce inequalities. *BMC Public Health*, 10, 347. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/20553631>. doi:10.1186/1471-2458-10-347
- Mutch, A. J., Lui, C. W., Dean, J., Mao, L., Lemoire, J., Debattista, J., . . . Fitzgerald, L. (2017). Increasing HIV testing among hard-to-reach groups: examination of RAPID, a community-based testing service in Queensland, Australia. *BMC Health Serv Res*, 17(1), 310. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/28454592>. doi:10.1186/s12913-017-2249-5
- Osinde, M. O., Kaye, D. K., & Kakaire, O. (2011). Intimate partner violence among women with HIV infection in rural Uganda: critical implications for policy and practice. *BMC Womens Health*, 11, 50. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22093904>. doi:10.1186/1472-6874-11-50
- Parkhurst, J. (2005). The Response to HIV/AIDS and the Construction of National Legitimacy: Lessons from Uganda. *Development and Change*, 36(3), 571-590.
- Picard, L. A., Groelsema, R., & Buss, T. F. (2008). *Foreign aid and foreign policy : lessons for the next half-century*. Armonk, N.Y.: M.E. Sharpe.
- Public Health. (2019). HIV and AIDS: An Origin Story Retrieved from <https://www.publichealth.org/public-awareness/hiv-aids/origin-story/>
- Raising Voices. (2019). Raising Voices About Us Retrieved from <http://raisingvoices.org/about/>
- Russell, S., Zalwango, F., Namukwaya, S., Katongole, J., Muhumuza, R., Nalugya, R., & Seeley, J. (2016). Antiretroviral therapy and changing patterns of HIV stigmatisation in Entebbe, Uganda. *Social Health Illn*, 38(1), 58-72. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/26382288>. doi:10.1111/1467-9566.12341
- Ruzagira, E., Grosskurth, H., Kamali, A., & Baisley, K. (2017). Brief counselling after home-based HIV counselling and testing strongly increases linkage to care: a cluster-randomized trial in Uganda. *J Int AIDS Soc*, 20(2). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/29052344>. doi:10.1002/jia2.25014
- Sekandi, J. N., Sempeera, H., List, J., Mugerwa, M. A., Asiimwe, S., Yin, X., & Whalen, C. C. (2011). High acceptance of home-based HIV counseling and testing in an urban community setting in Uganda. *BMC Public Health*, 11, 730. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/21943164>. doi:10.1186/1471-2458-11-730

- Sia, D., Onadja, Y., Hajizadeh, M., Heymann, S. J., Brewer, T. F., & Nandi, A. (2016). What explains gender inequalities in HIV/AIDS prevalence in sub-Saharan Africa? Evidence from the demographic and health surveys. *BMC Public Health*, *16*(1), 1136. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27809824>. doi:10.1186/s12889-016-3783-5
- Smith, J. A., Sharma, M., Levin, C., Baeten, J. M., van Rooyen, H., Celum, C., . . . Barnabas, R. V. (2015). Cost-effectiveness of community-based strategies to strengthen the continuum of HIV care in rural South Africa: a health economic modelling analysis. *Lancet HIV*, *2*(4), e159-168. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/25844394>. doi:10.1016/S2352-3018(15)00016-8
- TASO. (2018 2/3/2019). TASO Entebbe Retrieved from http://www.tasouganda.org/index.php?option=com_content&view=article&id=72&Itemid=218
- Thorton, R. (2008). *Unimagined Community Sex, Networks, and AIDS in Uganda and South Africa*. Berkeley and Los Angeles California University of California Press.
- Uganda Bureau of Statistics. (2018). *Uganda Demographic and Health Survey 2016*. Retrieved from Kampala, Uganda: <https://dhsprogram.com/pubs/pdf/FR333/FR333.pdf>
- Uganda Ministry of Health. (2017). *The Uganda Population-Based HIV Impact Assessment*. Uganda Retrieved from <https://afro.who.int/sites/default/files/2017->
- UNAIDS. (2017). Uganda Fact Sheet. Retrieved from <http://www.unaids.org/en/regionscountries/countries/uganda/08/UPHIA%20Uganda%20factsheet.pdf>
- UNAIDS. (2018a). *Miles to go: closing gaps, breaking barriers and righting injustices*. Retrieved from <http://www.unaids.org/en/resources/documents/2018/global-aids-update>
- UNAIDS. (2018b). *The Youth Bulge and HIV*. Retrieved from https://www.youthpower.org/sites/default/files/YouthPower/resources/the-youth-bulge-and-hiv_en.pdf
- UNAIDS. (2019). About UNAIDS Retrieved from <http://www.unaids.org/en/whoweare/about>
- White, M., Garbez, R., Carroll, M., Brinker, E., & Howie-Esquivel, J. (2013). Is "teach-back" associated with knowledge retention and hospital readmission in hospitalized heart failure patients? *J Cardiovasc Nurs*, *28*(2), 137-146. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22580624>. doi:10.1097/JCN.0b013e31824987bd
- World Health Organization.(2018, 7/19/2018). HIV/AIDS Fact Sheets Retrieved from <https://www.who.int/news-room/fact-sheets/detail/hiv-aids>
- Zakumumpa, H., Rujumba, J., Kwiringira, J., Kiplagat, J., Namulema, E., & Muganzi, A. (2018). Understanding the persistence of vertical (stand-alone) HIV clinics in the health system in Uganda: a qualitative synthesis of patient and provider perspectives. *BMC Health Serv Res*, *18*(1), 690. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/30185191>. doi:10.1186/s12913-018-3500-4