



Uganda's Secondary School Education and its Contribution to HIV/AIDS Outcomes

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List of Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
DHS	Demographic and Health Survey
FLIA	Firoz Lalji Africa Institute
FAWE	Forum for African Women Educationalists Uganda Chapter
HIV	Human Immunodeficiency Virus
LMIC	Low- and Middle-Income Countries
MoES	Ministry of Education and Sports
NGO	Non-Governmental Organisation
NPA	National Planning Authority
NSEF	National Sexuality Education Framework
NSP	National HIV and AIDS Strategic Plan
PTA	Parent Teacher Association
PLWHA	People Living with HIV/AIDS
RCT	Randomised Controlled Trial
PEPFAR	The U.S. President's Emergency Plan for AIDS Relief
SSA	Sub-Saharan Africa
TB	Tuberculosis
UBOS	Uganda Bureau of Statistics
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNECA	United Nations Economic Commission for Africa
UNFPA	United Nations Population Fund
UPE	Universal Primary Education
USE	Universal Secondary Education
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization

Executive Summary

This report aims to analyse the quality of health education in secondary schools in Uganda. Through the mixed-method approach, it investigates the barriers to more effective learning about HIV - one of the most concerning public health issues that is high on the political agenda in the country.

The analytical part of the report is preceded by an extensive literature review looking at the broader Sub-Saharan African context and discussing interconnect-edness between health and education, and key factors influencing the spread of HIV. The literature review demonstrates that health and quality education mutually reinforce each other, while stigma, in-creased vulnerability of the youth, cultural traits, gender gap, and the COVID-19 pandemic are some of the most important factors in Sub-Saharan Africa that can im-pede the translation of education into positive health outcomes and vice versa.

The following detailed background study of Uganda discusses key characteristics of the country's educational system from a historical perspective, with a particular fo-cus on secondary education. It is shown that the educational system in Uganda has been influenced by multiple external ac-tors throughout history and remains par-tially dependent on foreign funding to make progress in increasing attendance and improving education quality. The background study also looks at the pro-gression of the HIV epidemic in Uganda

and its current state, discussing the popu-lar image of the country being a "success case" in managing the HIV epidemic.

The substantive part of the report is di-vided between quantitative and qualita-tive analysis and consists of four sections. The first section employs regression anal-ysis to investigate the strength of the as-sociation between schooling and individ-ual behaviour that can affect the spread of HIV. The analysis shows that the number of years of schooling is positively associ-ated with HIV testing frequency for Ugan-dan youth. This might indicate that educa-tion has been one of the determinants of the shift in people's behaviour to more so-cially desirable patterns. Meanwhile, the potential effect of education is modest. The further analysis attempts to unpack the barriers to the effective translation of secondary school education into better knowledge and action.

The second and third analytical sections investigate the link between education and HIV at the central government policy level. The second section is centred around the content analysis of the newest secondary school curriculum and its pre-decessor. It is shown that the topic of HIV permeates the curricula, which stipulates a transfer of sufficient knowledge on HIV to students to induce optimal behaviour. Nevertheless, while the lack of graded as-sessment in the old curriculum might have impeded actual learning, it's not been enough time for the principles of the new

curriculum, adopted in 2020, to be put into teaching practice. The third section produces a content analysis of related government policy documents to estimate how favourable the broader institutional environment is for secondary school students to effectively internalise the content about HIV stipulated by the curriculum. It is shown that HIV education is prioritised in the related government policies. However, the policy gaps include a lack of focus specifically on secondary education as well as a limited methodological toolkit to contribute to the prevention of HIV spread through secondary education.

The last analytical section aims to close the gaps of preceding quantitative and qualitative analysis by gathering information on the impediments to efficient learning through several key informant interviews. Among the key themes are stigma and cultural beliefs limiting learning around the sensitive issue of HIV; the significant influence of family members' beliefs and attitudes on learning about HIV; the strong influence of teachers' beliefs and attitudes on what's taught in class, and lack of teacher accountability in this respect; differential teaching of HIV in different types of schools; lack of examination on HIV topics that discourages learning; and lack of adequate teaching materials.

The report also pays due attention to the COVID-19 pandemic and the disruptions it brought to Uganda's educational and health systems. The analysis shows that the world's longest school closure

adversely affected attendance, learning and retention, and the prevalence of child marriage and child pregnancy. The COVID-19 pandemic, to an extent, undermined the effort to encourage socially desired behaviour to curb the spread of HIV through secondary education in Uganda, which was disproportionately hit during the crisis. The extra effort from public authorities will be needed soon to overcome the constraints that the COVID-19 pandemic imposed on school education and to restore previous progress in making secondary education an influential tool to control HIV.

It is concluded that secondary education has real potential to promote knowledge about HIV and related positive action in Uganda. Nevertheless, there are several important constraints that don't allow it to harness its full potential to combat HIV. There is the stigmatisation of people living with HIV, culture-based reluctance to teach and learn about sensitive or taboo topics, unfavourable learning environment and organisational shortcomings. Overcoming these constraints will define success in making secondary education one of the important tools to fight HIV in Uganda. Lastly, the COVID-19 pandemic put additional pressure on Uganda's educational and health systems, which now need extra resources to adapt to new realities.

Based on the findings of the report, the following recommendations were given to improve the quality of health education in secondary schools in Uganda:

- HIV and education policies should increase their focus on targeting secondary schools and the youth and integrating HIV/AIDS education into the classroom rather than relying on NGOs and extracurriculars.
- Policies on HIV and education need to include more detailed information on their implementation strategies.
- More efforts should be undertaken to address the issue of stigma around HIV/AIDS education in secondary schools.
- Policies need to address the specific effects of COVID-19 on the HIV/AIDS and secondary school education nexus.
- The government must implement strategies and campaigns to get adolescent kids back into school.
- Policies should consider the fragmentation of Uganda's secondary school circumstances and should adopt localised approaches at local government level, incorporating community voices, to provide more context-specific solutions.

1. Introduction

1. Introduction

1.1 Overview

Education and health are closely intertwined, and the nuanced dynamics of that relationship and the role of policy play out in the context of Uganda. Uganda is a rapidly growing and impactful country globally known for its 'success story' in fighting HIV/AIDS.

The following report explores how the quality of secondary school education in Uganda contributes to HIV/AIDS outcomes. A high-quality education encompasses various factors, including the development of relevant skills, providing appropriate school facilities and resources, qualified teaching personnel, and achieving gender equality (UNESCO, 2023).

The study delves into the relationship between health and education while analysing secondary school education gaps that impact educational quality. It is divided into four main sections with a broad literature review covering critical topics such as interconnectedness between health and education and the influential factors contributing to the spread of HIV/AIDS. Then it continues by highlighting the case study of Uganda, explaining its rich educational history and how the educational system has evolved over time, informing the understanding of how it functions today.

Moreover, it positions Uganda and its fight against HIV/AIDS in the broader Sub-

Saharan African context. The analysis portion utilises a mixed-method approach utilising Demographic and Health Survey data (DHS) from Uganda, national policy documents, secondary school curriculums, and key informant interviews to better understand Uganda's education system and its relationship to HIV/AIDS outcomes.

The importance of this report is notable because of the growing adolescent population in Sub-Saharan Africa, as well as, adding to a body of literature where there is limited focus on secondary school education and a lack of policy attention to educational quality in SSA. Furthermore, the study places special emphasis on the influence of COVID-19 and its impact on secondary school education, which is timely and important for scholarship in this field.

It further includes the importance of gender and considers this nuanced and layered discussion within the broader discussion about education and HIV/AIDS. This study aims to understand these current gaps in secondary education quality that impact learning processes necessary for behaviour changes leading to positive health outcomes. Against this backdrop, the paper poses the question: How and through which mechanisms have secondary school education contributed to the

current HIV-related health outcomes in Uganda?

1.2 Key Concepts

Two key definitions are critical to the report: understanding high-quality education and risk-taking behaviours.

High-quality education is defined using components of Daly et al. (2014), Mocan & Altindag (2014) and Sapolsky's (2004) work on the subject. They discuss how it must include adequate funding, skilled and motivated teachers, as well as curriculum and instruction that is relevant and engaging (Daly et al, 2014). Additionally, supportive, and safe learning environments should minimise stress and promote positive emotional experiences (Sapolsky, 2004). Ultimately, access to these key educational resource components is used to help to achieve more positive outcomes like better health (Mocan &

Altindag, 2014). Various literature discusses how to define risk-taking behaviours, and we use the one presented by Ssewamala et al. (2022). Risk-taking behaviours are characterised by actions or behaviours that increase the chance of contracting or transmitting the disease. These can include unprotected sex with multiple partners, not getting tested for HIV regularly, unprotected sex, early sexual initiation, and adolescent pregnancy. For these reasons, it is critical to have early educational interventions with adolescents as they are in a critical time to prevent or dissuade young people from taking on avoidable risks (Ssewamala et al., 2022). It is important to use the definition sensitively with personal bias considered and within the situational country context.

1.3 Overall Findings and Recommendations

While the first section of the analysis finds limited results for the positive association between HIV testing frequency and education attainment, further evidence is presented in the following three methods. The report finds that the successful implementation of the new HIV/AIDS curriculum in Uganda has been hindered by various barriers, including a lack of resources, stigma, teacher training, and the COVID-19 pandemic. Uganda's health and education policy on HIV/AIDS

education in Uganda prioritises education but has gaps, including a lack of detail on prevention methods, testing, and treatment. Lastly, the key informant interviews elucidate how the quality of HIV/AIDS education in Ugandan secondary schools is highly dependent on the type of institution, with international, government, private, and faith-based schools all differing in their teaching of HIV/AIDS education leading to fragmentation across Uganda. Moreover, the perceptions and influences

of parents and families highly influence HIV/AIDS education. Additionally, there is no mandate for schools, especially non-state-funded schools, to implement important health topics and therefore, HIV/AIDS education is stationed at the periphery of mainstream education.

Key recommendations highlighted at the end of the report include: (1) focusing on integrating HIV/AIDS into the classroom rather than leaving this critical information to the periphery, (2) bridging the gap between the government's ambitious goals and their actual implementation, (3) addressing the fragmentation of Uganda's secondary school education system, (4) incorporate community voices to provide context-specific solutions, and (5) addressing the high dropout rates exacerbated by the COVID-19 pandemic.

The background of the slide features a stack of books with various colored spines (green, blue, red, yellow) on the left side. A large, semi-transparent red rectangle covers the majority of the slide, with the text and lines centered within it.

2. Literature Review

2. Literature Review: HIV/AIDS & Education in Sub-Saharan Africa

2.1 The Education and Health Nexus

There has long been a consensus that education and health are positively associated (Lleras-Muney, 2005; Ross & Wu, 1995). On the one hand, overcoming health-related problems can improve educational outcomes (Cesur et al., 2014; Hale & Viner, 2018). This is because boosting student and teacher health, sanitation, and hygiene in schools creates better learning environments, leading to better learning outcomes.

Conversely, education also plays a role in achieving positive health outcomes (Raghupathi & Raghupathi, 2020; Sapolsky, 2004; Ward & Viner, 2016). By obtaining a high-quality education, individuals can access a higher economic status in society (better jobs, higher salaries, more benefits, and the ability to pay taxes). This enables access to better resources, healthcare, hygiene, and sanitation (Daly et al., 2014; Mocan & Altindag, 2014; Sapolsky, 2004). The Grossman Model shows that education can also directly impact an individual's health because it increases knowledge and understanding of health issues, encouraging informed decisions and safer behaviour patterns (Muirneen, 1982; Wagstasff, 1993).

In synthesising this literature, there appears to be a spiral-like relationship between health and education, with

education sitting in the middle of the spiral as a highly influential factor that continuously fosters the behaviour changes needed for positive health outcomes. Understanding how a country's school education contributes to the behaviour changes needed for positive health outcomes is therefore vital.

While the literature on the African context tends to focus on primary school education, select authors have noted that health education is critical in secondary schools (Ward & Viner, 2016; Viner et al., 2017). Secondary school health education has been shown to lower teenage pregnancy rates and increase contraception use (Bongaarts, 2010; Mahy & Gupta, 2003).

Policies must address educational attainment, access, and quality to ensure that education positively contributes to national health outcomes. According to Madani (2019), however, most countries aim to ensure optimal access to education for their children. Though, they need to pay more attention to the central issue of educational quality, which has been detrimental to achieving favourable learning outcomes.

The neglect of targeting educational quality is rooted in the difficulty of finding a broadly applicable definition of 'quality

education.' The concept is complex and entails dynamic features, which change depending on context-specific factors (Adams, 1993). Subsequently, understanding how secondary school education contributes to national health outcomes requires a critical examination of how context-specific factors influence the access, attainment, and quality of health education in secondary schools.

That said, the role of education can be analysed and addressed by looking at influential factors, such as the curriculum, national policy coordination, learner attendance and access to education, teaching methods, school infrastructure, learning materials, assessments, gender equity, the availability of financial resources or stigma towards the learning content (Madani, 2019).

Given the limited focus on secondary school education and the lack of policy attention on educational quality in SSA, the following study explores the current gaps in secondary education quality, which affect the learning processes needed for behaviour changes that foster positive health outcomes. As the study focuses on 'current gaps', it pays special attention to the influence that COVID-19 has had on secondary school education.

Moreover, because quality education is a context-specific concept and health is a broad field in which some countries are more affected by certain health issues than others, the study narrows down to the case of Uganda.

Against this backdrop, this study centres on the question of how and through which mechanisms secondary school education has contributed to Uganda's current HIV-related health outcomes.

2.2 Factors Encouraging the Spread of HIV/AIDS

Although HIV/AIDS transmission rates are stabilising in Africa, it remains a significant public health issue, with SSA accounting for most new infections worldwide (UNAIDS, 2021; CSIS, 2019). Over the last 20 years, the research conducted on HIV/AIDS in Africa has significantly expanded (Campbell et al., 2007; Parker & Aggleton, 2003; Jin et al., 2021). The scope of this literature reflects the intersectional, multi-disciplinary character of the efforts to overcome the disease.

As for the role of secondary school education, stigmatisation, the vulnerability of the youth, knowledge about prevention and treatment, and the impact of COVID-19 are all influential and intersecting factors contributing to the spread of HIV/AIDS.

Stigmatisation

People living with HIV/AIDS (PLWHA) face both health problems and the social construction (stigma) of HIV/AIDS and sexual practices. Stigma can lead to distancing and isolating HIV-positive people in society (Mbonu et al., 2009; Greeff et al., 2008).

Stigma can take two forms: internal and external. External stigma results in discrimination and is a tangible experience (Rankin et al., 2005). Internal stigma is felt or imagined and involves shame and fear of discrimination associated with HIV/AIDS, particularly among those infected (Greeff et al., 2008). It acts as a survival mechanism to protect oneself from external stigma, often leading to risky behaviours such as refusing to disclose a positive HIV/AIDS status or rejecting help (Siyam'kela Project, 2003).

Addressing issues of stigmatisation, including through improved youth education, has been shown to reduce risk-taking behaviours amongst HIV-positive Africans (Faust & Yaya, 2018). Understanding one's risk of contracting or transmitting the disease and effective preventive measures can decrease risk-taking behaviours, ultimately leading to reduced transmission (Faust & Yaya, 2018). That said, stigmatisation can cause a lack of education about HIV/AIDS, enhancing vulnerability to HIV-related stigma.

The vulnerability of the youth

Today, more than 60% of Africa's population is under 25. By 2030, Africa's youth is estimated to comprise 42% of the global youth (United Nations Statista, 2022; World Economic Forum, 2022).

The African youth is particularly vulnerable to the stigmatisation of HIV/AIDS. The stigma of health service providers and influential adults poses a primary health risk for adolescents (Michielsen, 2013). They

are more susceptible to peer pressure and groupthink, which can increase risky behaviour (Michielsen et al., 2013). Thus, HIV intervention strategies targeting youth are vital.

Besides stigma, young people also have a heightened vulnerability to HIV/AIDS due to risk-taking behaviours that emerge during adolescence, such as alcohol consumption, sexual exploration, limited knowledge regarding sexual reproductive health, poverty, and gender imbalance (Unfpa, 2008). Therefore, a lack of behavioural education in young people becomes a significant constraint on curbing risk-taking behaviour.

However, although interventions typically enhance knowledge and alter attitudes to a lesser degree, the impact on behaviour is uncertain. There is limited proof of the effectiveness of interventions in decreasing HIV/AIDS incidence (Michielsen et al., 2010). This suggests that the interventions do not adequately inform young people in a way that fosters the behaviour changes needed to combat the spread of HIV/AIDS.

Lower levels of education are positively correlated with HIV/AIDS prevalence (Galant & Maticka-Tyndale, 2004; Paul-Ebhohimhen et al., 2008; Mukoma et al., 2009). Thus, targeting education systems appears more effective than other interventions to combat HIV prevalence.

Currently, common preventative strategies promoted in SSA secondary schools that target behaviour typically include

condom use, abstinence, and partner reduction. These approaches appear less realistic, not contextually relevant or need to adequately inform individuals of the disease (Foss et al., 2007; Mah, 2012). The implementation and impact of these behavioural changes are also limited, given the reluctance of teachers and health professionals to discuss condom use with students, knowledge, and training gaps in teachers, as well as resource constraints, including a lack of teaching materials (Chory et al., 2021; Michielsen et al., 2010).

Consequently, embedding HIV/AIDS into secondary school education can only be effective if its implementation and the learning content are of high enough quality to encourage the necessary behaviour changes among vulnerable youth.

Knowledge gaps

Increased awareness of HIV/AIDS testing, counselling programs, ARTs and sexual behaviour also play a crucial role in prevention, as they encourage early disease detection and treatment (Chory et al. 2021; Nglazi et al., 2013). However, such awareness tends to be limited in SSA, especially in adolescent girls and marginalised groups (Campbell et al., 2007; Celum et al., 2015; Parker & Aggleton, 2003; Rousseau et al., 2021; Mugo et al., 2017).

This points to the issue of gender inequality and the need for intersectional approaches. Knowledge gaps again demonstrate the need for interventions in the

education sector across the region that consider context-specific issues.


COVID-19 and HIV/AIDS in SSA

The COVID-19 pandemic's impact on PLWHA, particularly in LMICs with weak and overburdened healthcare systems, has caught widespread attention (Golin et al., 2020). The pandemic constrained essential healthcare resources, including disruptions to HIV, TB, and malaria services. Resource chains were significantly disrupted and reallocated (Parpia et al., 2016; UNECA, 2020). Disruptions to the healthcare system can reverse decades of progress. A 6-month interruption to ART supplies alone can lead to 1.6 times increase in HIV-related fatalities over one year (Jewell et al., 2020).

Despite the strains on healthcare service delivery, HIV programs have shown resilience and adaptability (Harris et al., 2022). HIV programmes maintained essential HIV services while providing COVID-19 protection for patients and staff (Golin et al., 2020).

Nevertheless, the pandemic has negatively affected young women in SSA because of lockdown measures and school closures. Overall, there was an increase in teenage pregnancies, school dropouts, child marriages, heightened gender and sexual-based violence, and reductions in prevention and treatment options for HIV and sexually transmitted infections (Murewanhema et al., 2022). Thus, COVID-19 has affected the role of

secondary school education in HIV/AIDS
outcomes in SSA

The background image shows a building with a gabled roof and a light-colored wall. A red semi-transparent overlay covers the central part of the image. The text '3. Introducing the Case of Uganda' is centered on this overlay. There are two horizontal black lines, one above and one below the text. In the bottom left corner, a person is partially visible, and in the bottom right corner, there is a blue bowl on a wooden stand.

3. Introducing the Case of Uganda

3. Introducing the Case of Uganda

Having established the factors influencing HIV/AIDS and how education fits into this, they can be used to analyse how Uganda's secondary school education contributes

3.1 Education in Uganda

Before Uganda was colonised, the country had its own robust education system organised at the community level. However, early religious, and colonial influences significantly impacted Uganda's education system. In the mid-1800s, Islam was introduced to the country by traders, bringing with it new educational approaches and literacy components. Teaching and studying with those familiar with the Qur'an further enhanced literacy development (Hanson, 2010; Kabay, 2021).

In the late 1800s, Christian missionaries arrived and continued efforts to expand literacy. As a result of ingrained cultural practices around information sharing, literacy spread rapidly and enthusiastically (Hanson, 2010). Community-led efforts in education created a network of locally operated and maintained village schools, which were supported by local churches and internally managed and taught, again at the community level (Hanson, 2010; Kabay, 2021).

However, the arrival of the British and their colonisation of Uganda in 1894 resulted in introducing a new education model based on the existing British

to HIV/AIDS outcomes. To do so, it is necessary to have an overview of HIV/AIDS and education in Uganda.

system (Kabay, 2021). This model emphasised improving the education of an "elite minority," producing inequality in access to quality education throughout the country (p. 41).

After gaining independence in 1962, Uganda experienced political instability and fragmentation in education (Kjær, 2019). Most schools were community-led and depended on financial support from PTAs. However, these community PTAs had control over finances and were empowered to set economic barriers to education access (Arinaitwe et al., 2015). The financial burden of school fees led to the exclusion of children from low-income families, further exacerbating inequality gaps.

By politicising education, President Museveni and his political party used an 'education for all' platform to reduce poverty and improve the country's economic well-being (Kjær & Muwanga, 2019). The government shifted education policy, curriculum, and budgets away from the power of the PTAs to centralised control in Kampala and decentralised the implementation of education policies, school management,

and funding administration to the district level (Arinaitwe et al., 2015).

Uganda adopted universal primary education (UPE) in 1997 and universal secondary education (USE) in 2007, removing the financial burden of prohibitive student fees and increasing student access to classrooms (Datzberger, 2018; Arinaitwe et al., 2015). Despite the positive outcomes of increased access to education, the quality of education has not substantially improved. The sector continues to struggle with teacher absenteeism, high dropout rates, financial leakages, unregulated PTA administrative fees, and inequity in education throughout the country (UNICEF, 2022; UNICEF, 2019; Kjær & Muwanga, 2019; Arinaitwe et al., 2015). Furthermore, while there has been an uptick in the number of students entering secondary school, the total remains below 25% despite the implementation of USE (UIS, 2017) meaning three quarters of adolescents are not exposed to the material.

The education sector is funded jointly by the government and international donors, with both financial streams flowing into the Education Budget Support Account. In 2021/22, Uganda's national education budget was primarily funded by the national government, with external funding comprising only three per cent of the total budget. Over the past five years, this decline has caused concern over the need for more external investments (Arinaitwe et al., 2015; UNICEF, 2022).

The impact of COVID-19 on education

The COVID-19 pandemic significantly impacted the education system in Uganda, with schools experiencing the longest lockdown in the world, lasting two years (UNICEF, 2023). The government made efforts to provide online resources, television and radio programs, and study packets. However, many students faced challenges accessing these materials due to constraints such as technology access, lack of financial resources, gender roles, and living in remote areas (Datzberger et al., 2022).

As a result, education communities in rural areas and without technological resources fell behind due to the digital divide in the country (Kaahwa et al., 2022). While all children were affected by the closure of schools, the intersectionality of the issue must be considered, as some groups may be disproportionately affected due to impeded access to education during COVID-19 (Datzberger et al., 2022).

The pandemic also led to a drop in secondary school enrolment, as many children found employment to help their families (Datzberger et al., 2022). Child labour increased from 21 to 36 per cent, affecting girls more than boys (UBOS, 2021). Additionally, the reopening of schools resulted in increased school fees, loss of teachers due to salary concerns, and school closures due to financial struggles (NPA, 2021; NAPE, 2021).

The impact of COVID-19 on the Ugandan education system is significant, with experts estimating that students are now approximately three years behind in their education (Datzberger et al., 2022). The pandemic disproportionately affected girls, as it increased violence, sexual abuse, teenage pregnancy, domestic duties, and early marriage, resulting in falling behind in studies or not returning to school (BMAU, 2020; FAWE, 2021).

3.2 HIV in Uganda

Uganda has been facing a severe HIV epidemic since its outbreak, with HIV and sexually transmitted infections being the primary cause of death between 1990 and 2013 (The Institute for Health Metrics and Evaluation, 2019). Nevertheless, the country has significantly reduced the HIV prevalence rate, with a decline from 9.6% to 6.6% between 1990 and 2005. As of 2021, Uganda has the tenth highest HIV prevalence rate globally, with an estimated 5.2% of the adult population living with HIV (UNAIDS, 2022).

Uganda has been considered one of the most successful countries to fight HIV in SSA since the early 2000s. However, the baseline prevalence rate in the early 1990s was largely overestimated to be nearly twice higher than what UNAIDS currently reports (Kirby, 2008). This framed the image of Uganda as a "success case" (Parkhurst, 2012).

Uganda is moving towards meeting the 2030 95-95-95 target, with 89% of people

The Ugandan government has a multisectoral approach to mitigate HIV/AIDS. The Ministry of Education and Sports Science has an HIV and AIDS Unit that helps the education sector develop, implement, and monitor HIV/AIDS educational interventions (MoES, 2023).

who live with HIV knowing their status, 92% of people on ART, and 95% of people on ART achieving viral suppression (UNAIDS, 2023). The HIV incidence rate in the country has declined from 11.6 to 2.4 per 1,000 people aged 15-49 since 1990, and the number of new HIV infections among young adults has been decreasing since 2012 (UNAIDS, 2023). However, despite the decline in HIV, the country continues to have one of the highest HIV exposure rates globally, with over 0.5 million HIV-positive Ugandans not getting the disease treated adequately (own calculations based on UN Population Division, 2019; UNAIDS, 2023).

Uganda also faces the problem of high levels of HIV stigmatisation, with 20.5% of Ugandans expressing the opinion that HIV-positive children should not attend the same school as their HIV-negative peers (DHS, 2016). Moreover, only 45.5% of young people have proper knowledge of HIV prevention, with young women

being slightly more informed than men (DHS, 2016).

Given the government's attention to the issue of HIV-related education in schools, these statistics cast doubt on the effectiveness of the mechanism through which the formal curriculum content translates into HIV-related knowledge and behaviour among young Ugandans.

Taken together, Uganda has significantly reduced the HIV prevalence rate. However, levels of HIV stigmatisation and inadequate knowledge of HIV prevention among young people pose a significant challenge to the government's efforts to fight the epidemic.

This calls for further research on the association between educational attainment and HIV-related behaviour needed to develop more effective strategies to combat the HIV epidemic in Uganda.

Impact of COVID-19 on HIV/AIDS

The COVID-19 pandemic adversely affected the situation with HIV in Uganda (Ben-Farhat, 2022). For example, the barriers to retention in HIV care were exacerbated for rural populations in such areas as transport, finance, clinic accessibility and stigma (Nalubega et al., 2021). A 40%

reduction in the number of people with HIV presenting to care was reported (Nalintya et al., 2023).

On the other hand, there is some evidence of improved HIV diagnostics and treatment delivery in developed urban areas during the COVID-19 lockdown (Izudi et al., 2022, p.1). This effect was achieved through innovative practices that emerged in the country in response to the disruption of the healthcare system (Izudi et al., 2022, p. 2).

With the world's longest school closure, the pandemic pushed up the prevalence of adolescent pregnancy and child marriage in Uganda (UNICEF, 2022). According to the Uganda National Examinations Board (2021), pregnancy was the second most significant reason why children did not report back to school after the COVID-19 lockdown, accounting for 17.9% of primary school and 30.5% of secondary school dropouts. The change in sexual behaviour and lack of education caused by the lockdown is likely to have exacerbated the HIV epidemic in recent years.

4. Analysis

4.1

How does schooling
affect socially desired
behaviour for
combating HIV/AIDS?

4. Analysis

Using a mixed-methods approach, the study provides a comprehensive and nuanced understanding of the relationship between education and health outcomes in Uganda. Overall, a mixed-methods approach is essential for this research as it allows for a more thorough investigation of the complex relationship between education and health outcomes in Uganda.

Insights gained from a mixed-methods approach provide valuable information to develop policies and interventions that address the underlying causes of health disparities and improve HIV outcomes for young people in Uganda.

4.1 How does schooling affect socially desired behaviour for combating HIV/AIDS?

Approach

Our quantitative analysis aims to estimate the effectiveness of health education, particularly HIV education, in fostering behaviour changes in Uganda. We centre it around testing for HIV as it is one of the positive behaviours helping to curb HIV and contributing to the first component of the 95-95-95 target (UNAIDS, 2015). We conduct a regression analysis using the 2016 and 2011 Uganda Demographic and Health Surveys data to test for the association between schooling and HIV testing frequency for different age cohorts. Detailed methodology for the analysis is described in Appendix 1.

Findings

Figure 1 displays regression coefficients (β_1) for different age cohorts along with 95 per cent confidence intervals. The coefficient starts being significantly different

from zero and negative. This implies increased testing frequency with more education for people aged 25-29 and younger as of 2016; that is, those who entered school in the mid-1990s or later.

The coefficients for males and females follow a similar trajectory and are not statistically different from each other. This finding implies a roughly 3 to 5 days (0.02 to 0.03 standard deviation) decrease in time since the last HIV test, with each additional year of education for people from the 25-29 age cohort and younger. In simple terms, for an average Ugandan under 29, the last HIV test was done almost half a year before the 2016 DHS interview, and for an average person of the same age but with one more year of education, this time span is 3 to 5 days shorter.

Meanwhile, older people's average time since their last HIV test did not change significantly with variation in years of

schooling. From the policy perspective, keeping in mind that over a 20-year period, Uganda managed to increase the mean number of years of schooling among the people aged 25 or older from 4.0 and 6.1 in 1995 to 5.7 and 7.6 in 2016 for females and males, respectively, this

effect is rather small (DHS, 1995; DHS, 2016). The findings hold after several robustness checks detailed in Appendix 2.

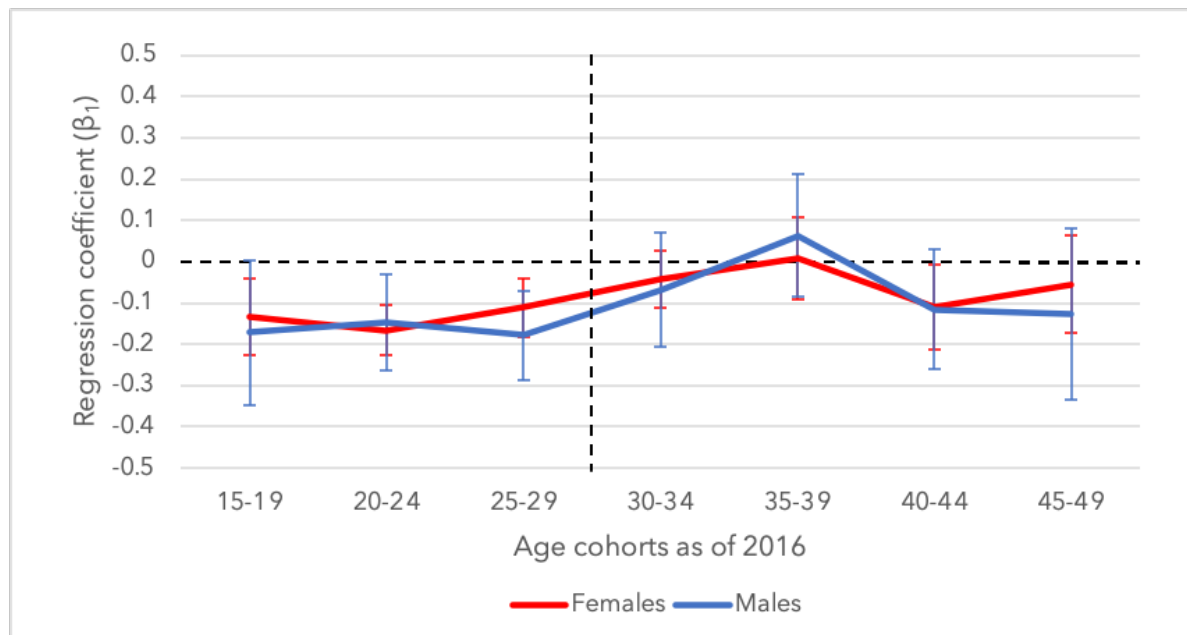


Figure 1. Months since the last HIV test regressed on education in single years for different age cohorts as of 2016 (5-year bins)

Discussion

One straightforward interpretation of the findings can be that introducing HIV education in schools – which only younger age cohorts were exposed to – drove more frequent testing. This is consistent with the timeline of the HIV epidemic in Uganda.

However, increased responsiveness to education among younger people might also be due to the current age effect rather than the cohort effect (i.e., individuals being more likely to test more often with more education when they are of certain age, regardless of their year of birth and

the circumstances which they lived through at a particular age, for example, because of the age-varying sexual behaviour). We run the same regressions as described in the previous section, but with the 2011 DHS data to test for the cohort versus age effect and to see whether there is a lag in patterns corresponding to the time difference between the two surveys. Ruling out the possibility that person's current age affected testing behaviour, could reduce the chance of omitted variable bias.

The results are mixed and do not allow to clearly attribute the effect to either birth year cohort or current age. In particular, for the 2011 data the regression coefficient becomes negative and significant for those aged 20-24 among females only (Figure 2), which corresponds to a 5-year lag from the 2016 survey and speaks for the birth cohort effect. Meanwhile, this is not true for male population, for whom the coefficient is constantly insignificant.

We also calculate Pearson's r for the 2011 regression coefficients and the 2016 values with a 5-year lag (to account for population ageing between the two surveys) and compare it to Pearson's r for the 2011 and 2016 regression coefficients without the lag. The results are also mixed, with the correlation being stronger with a 5-year lag than without it for females (0.85 against 0.52) but weaker for males (0.33 against -0.35).

The same computations but with the highest educational level as an independent variable yield stronger correlation between the results for different surveys without the lag for both females and males. Here, the youngest age cohorts were not considered for the reason described in the methodology section. Relevant limitations of the analysis are discussed in Appendix 3.

To summarise, the positive association between educational attainment and frequency of testing for HIV among the people who studied at school in the mid-

1990s or later might potentially – under the discussed caveats – indicate a positive effect of education on behaviour related to HIV. Nevertheless, the model explains only a small proportion of variation in testing frequency, with a very modest R -squared (smaller than 0.05), thus, the potential effect of education itself is very small.

Moreover, our identification strategy doesn't show the exact mechanism through which educational attainment could influence people's behaviour. Besides the straightforward explanation that pupils of younger cohorts have been taught at school some knowledge about HIV which has translated into more frequent testing, there is some evidence from the interviews (discussed further in the report) that different health-focused NGOs, community leaders and religious groups in Uganda also target schoolchildren for their educational interventions.

The next sections of the report work to close the gaps of the quantitative analysis by looking into the national curriculum and policies aimed at HIV education in Uganda as well as investigating, through key informant interviews, the barriers that prevent secondary school education in Uganda from being effective in inducing better knowledge of HIV and more positive action to curb the spread of the disease.

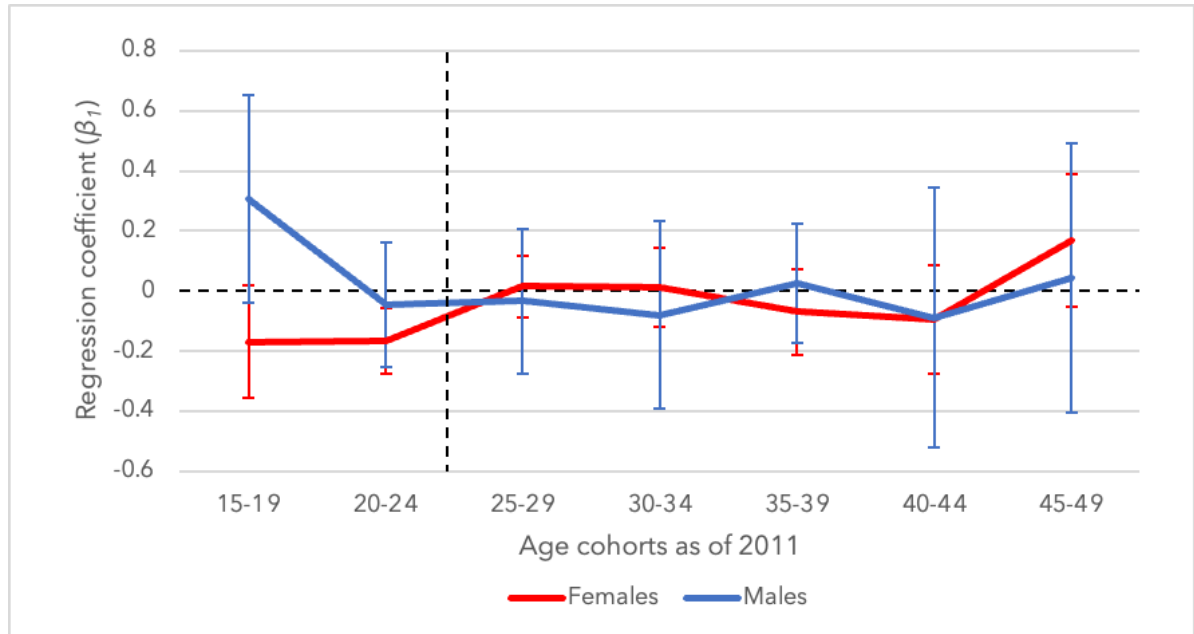


Figure 2. Months since the last HIV test regressed on education in single years for different age cohorts as of 2011 (5-year bins)

A person is writing on a chalkboard. The image is overlaid with a large red diamond shape. The text '4.2' is centered within the diamond.

4.2

How is HIV/AIDS taught
in Uganda's secondary
schools?

4.2 How is HIV/AIDS taught in Uganda's secondary schools?

Approach

To analyse whether the small potential effect that HIV/AIDS education in secondary schools has on behaviour change can be attributed to the content of secondary school education, this section centres on a discourse analysis of the national lower secondary school curriculum.

It provides an overview of the HIV/AIDS-related content embedded in the older and current secondary school curricula, using a combination of primary sources (the new curriculum, and grey literature) and secondary sources (academic sources that have previously analysed the older curriculum and its limitations). Overall, this section shows that implementing and delivering the new secondary school curriculum is at the heart of the issue, particularly due to the COVID-19 pandemic.

HIV/AIDS in the secondary school curriculum

Uganda's secondary school curriculum has undergone significant changes and improvements over the years, particularly with the introduction of a new curriculum in 2020, which differs in several ways from the previous curriculum that was implemented in the early 2000s (Mubangizi, 2020).

One key difference is that the new curriculum emphasises competency-based learning, including critical thinking, problem-solving, and practical skills

development (Mubangizi, 2020; NCDC, 2020 a), while the older curriculum had a narrower focus on theoretical knowledge and rote learning (Clegg et al., 2008).

Another significant improvement in the new curriculum is its approach to HIV/AIDS and sex education. The new curriculum has a more comprehensive approach, providing students with accurate and up-to-date information on HIV transmission, testing, treatment, and management, as well as human sexuality, reproductive health, and the importance of using contraception as well as abstinence (NCDC, 2020 b & c).

Despite educating students on the scientific factors of HIV/AIDS, such as the biology behind HIV/AIDS and other sexually transmitted diseases, the older curriculum mainly emphasised abstinence as the primary means of HIV and pregnancy prevention, rather than informing students on behaviour and sexuality (Mirembe, 2002). As part of the old curriculum, exams also did not test students on HIV/AIDS content (Jacob et al., 2007; Mirembe, 2002).

Furthermore, the new curriculum emphasises inclusivity and diversity, addressing issues of gender equality, disability rights, and social inclusion (NCDC, 2020 a), whereas the older curriculum instead focused on abstaining from sex until marriage and eschewing homosexuality (Mirembe, 2002).

Lastly, the new curriculum has a more diversified and flexible assessment and evaluation system, including formative and summative assessments, portfolios, and practical assignments, which increase the learning quality (NCDC, 2020 a). In contrast, the older curriculum had a more rigid, exam-focused evaluation system (Clegg et al., 2008; Kinsman et al., 1999).

This said, Uganda's new secondary school curriculum is designed to provide students with a more holistic and practical education, addressing their social, economic, and cultural needs and preparing them for a rapidly changing and challenging world (NCDC, 2020, a).

Overall, the new curriculum's emphasis on HIV and sex education, inclusivity and diversity, active learning methods, and diversified assessment and evaluation systems significantly improved the quality of HIV/AIDS education over the older curriculum, which had limitations in these areas.

New curriculum implementation strategy

The implementation strategy for Uganda's new secondary school curriculum introduced in 2020 was developed by the MoES in collaboration with other stakeholders, including teachers, school leaders, parents, and development partners (MoES, 2020). The strategy outlines five key steps and measures required to implement the new curriculum in schools effectively.

First, the MoES developed guidelines for the implementation of the new curriculum. The guidelines outline the learning areas, subjects, and competencies to be covered under the new curriculum.

Second, training programs are being established targeting teachers and school leaders to be able to adapt to the new curriculum and its teaching methods. The training is aimed at equipping teachers with the necessary skills and knowledge to deliver the new content and meet the new learning objectives, including those on HIV/AIDS.

Third, in collaboration with development partners, the MoES planned to develop and distribute teaching and learning materials to schools, including textbooks, teacher guides, and assessment tools.

Fourth, the implementation of the new curriculum is monitored and evaluated regularly to identify areas of success and areas that require improvement. This is done through school inspections, teacher assessments, and student evaluations.

Finally, the strategy involves engaging stakeholders, including parents, communities, and development partners, to support the implementation of the new curriculum. Stakeholders are encouraged to provide feedback on the implementation process and to support schools in implementing the new curriculum.

Thus, implementing Uganda's new secondary school curriculum is lengthy and depends on sustained efforts. This means a large portion of scholars have not yet

adequately engaged with the curriculum, alluding that the content around HIV/AIDS engaged with has mostly been that of the older curriculum.

Barriers to implementation

Despite the efforts made thus far, various barriers have hampered successful curriculum implementation. A lack of resources, including textbooks, teaching materials, and trained teachers continues to be one of the main constraints (Ahabwe, 2022). Many schools have not received the necessary resources to effectively implement the new curriculum, resulting in difficulties delivering the new content and meeting the new learning objectives, including those on HIV/AIDS.

Another significant barrier was the COVID-19 pandemic, which fundamentally disrupted the education system. The two-year long closure of schools meant a loss of learning time and delayed curriculum implementation.

Schools were closed in March 2020, and while some schools were able to resume teaching through online and distance learning, many students did not have access to the necessary technology and resources to participate in these forms of learning (Ahabwe, 2022). This resulted in unequal access to education, with some students being left behind in their learning. Additionally, the government implemented a temporary curriculum during

the pandemic, in which HIV/AIDS was not at all included (MoES 2020).

The pandemic also disrupted the planned teacher training on the new curriculum, particularly among those in rural areas with limited internet access (Monica, 2022). Furthermore, many schools faced financial challenges due to the pandemic, including reduced funding and decreased enrolment, which affected their ability to effectively provide the necessary resources to implement the new curriculum (NAPE, 2021).

Taken together, successful implementation of the new curriculum will depend on sustained efforts to provide resources and support to schools and teachers, as well as continued monitoring and evaluation of the implementation process and taking the effects of COVID-19 into consideration. Therefore, consistent policies must be coupled with the implementation process and translate into the needed action. However, as shown in the following sections, policy plans have been lofty and led to limited action.

In turn, the improvements in educational quality on HIV/AIDS in the new curriculum have not yet taken hold in Uganda, alluding to one fundamental reason for the small effect that education has had on the desired behaviour to overcome the disease.

4.3

How are national
policies addressing
HIV/AIDS education?

4.3 How are national policies addressing HIV/AIDS education?

Approach

To further understand why secondary school education has a small effect on the behaviour changes needed to overcome HIV/AIDS, it is vital to consider the national government's policies. This critical discourse analysis centres on main policy documents, including The National HIV and AIDS Strategic Plan 2020/2021-2024/2025, National Policy Guidelines on Ending HIV Stigma and Discrimination, The National Sexuality Education Framework 2018 (NSEF), the Monitoring and Evaluation Plan for the National HIV and AIDS Strategic Plan 2020/2021-2024/2025, the President's Fast-Track Initiative on Ending HIV and AIDS in Uganda, and the National Planning Authority's *Towards Safe Opening of The Education Sector in COVID-19 Times*.

This analysis aims to answer: To what extent are national policies addressing HIV/AIDS education? It considers the incorporation of HIV/AIDS in secondary school policy to see how it impacts behaviour change with consideration for gender, stigma, and COVID-19.

National policies on HIV/AIDS in secondary education

Uganda has a centralised national plan and budget tackling HIV/AIDS. The National Committee for the Prevention of Aids wrote the first strategic plan along with a monitoring and evaluation component in 1987 (Slutkin et al.; 2006). The

Uganda AIDS Commission was established in 1992 under the President's office to create HIV/AIDS policies. The Uganda AIDS Commission and the MoES led the creation of most of the complementing strategic planning documents with the assistance of critical national and international actors like those established through bilateral and multilateral partnerships and national and local community partners.

The President's Fast Track Plan, the NSP, the NSP Monitoring and Evaluation, and the Ending HIV Stigma and Discrimination document are all national policy documents that are not narrowed down to education. Thus, it is important to investigate how these broader strategies address HIV/AIDS education in secondary schools. The COVID-19 Education document and the Education Framework are already focused on education. However, it is necessary to see if it is possible to further narrow it down to secondary schools and lower secondary schools.

The NSP does not specifically address secondary school education, but it includes information on adolescent boys and girls, and in-school and out-of-school children. The corresponding M&E component also does not specifically address secondary schools or the President's Fast Track plan, but they evaluate some issues pertaining to adolescent boys and girls. Conversely, the Guidelines for Ending HIV Stigma and Discrimination, the NSEP, and the COVID-19 School Reopening

documents address students attending secondary school and specific boy and girl policies.

While general HIV/AIDS documents are not specifically tailored to those in secondary school because they are not education documents, it is worth considering the intersectional circumstances of adolescents and how they are experiencing HIV/AIDS education in these environments. This is especially important when one of the main challenges is “stagnant levels of comprehensive HIV knowledge” and an increase in HIV infections among girls between 15 and 24 years (NSP, 2020, p.13).

Having specific and measurable policies to address the needs of adolescents is critical not only for secondary school students but also following graduation.

As previously mentioned, adolescent girls and boys are included in all policy documents mentioned above. Gender is discussed in the binary with the distinction between male and female genders in the policy documents. In the broader context, the consequences of HIV/AIDS on adolescent girls in Uganda are significant; UNAIDS estimates that over 800,000 girls are living with HIV (UNAIDS, 2017). While the policy documents have gender-centred language, mentioning girls does not translate into actionable steps, nor is it comprehensive. The policies, and the data used to create them, group women and girls together as a target rather than separating them.

The purpose of the NSEF is to provide a comprehensive framework for education and sexual health, targeting secondary and lower secondary schools. It specifically addresses sexual health in lower secondary schools and includes learning about HIV prevention and the differences between how girls and boys are impacted by HIV/AIDS (NSEF, 2018). It further encourages abstinence as an HIV prevention and mentions other ways of prevention but does not go into detail about other methods (NSEF, 2018).

The national document about stigma is more comprehensive and intersectional in its policies and approaches to addressing the needs of secondary school students. It addresses the unique intersectional components of being a female and male child in school and highlights differences in socioeconomic experiences.

Furthermore, it looks at how stigma is a driver in dropout rates and how discrimination can negatively impact students (Uganda AIDS Commission, 2020). The document emphasises children's “right to receive HIV-related education, particularly regarding prevention and care” (Uganda AIDS Commission, 2020, p. 21). It outlines both the rights of children and the necessity for children to be a part of the national conversation about how HIV impacts them uniquely. However, it does not give specific guidance for how education systems, including secondary schools, can accomplish these goals.

Nevertheless, this document goes the furthest in considering the needs of children

and those in secondary schools. The NSEF also addresses stigma and education, but to a lesser extent than the national policy document centred around the topic. The NPA Covid-19 document does not address stigma.

The only document to contain policies about Covid-19 is the NPA document about school reopening since it was written specifically about the pandemic. In contrast, the others were released at the beginning of the pandemic or before it. It engages with gender issues and Covid-19 as well as secondary schools and Covid-19. The document mentions HIV and the general need to continue to combat it but does not specifically target secondary schools (NPA, 2021).

Current policy gaps

While this analysis discusses gaps in HIV/AIDS policies related to education, it is necessary to recognise that HIV/AIDS education is a priority in the policies. The

NSP has assigned the MoES with the objective to “ensure that the pre-service curriculum in training and learning institutions integrate HIV and AIDS”, and while it does not specifically target secondary school children, it could involve the training of those entering the education field or other professional fields relating to youth (NSP, 2020, p. 64).

Moreover, gaps also include a lack of detail on other methods that could be encouraged to prevent HIV/AIDS, as well as lacking information on testing and treatment. Furthermore, the M&E components lack specific and measurable components addressing the multidimensional concerns facing youth in the country. Finally, there are gaps in the policy documents with the inclusion of secondary schools, specifically lower secondary school policies and the promotion of HIV/AIDS education in adolescent groups.



4.4

Which key mechanisms
limit HIV/AIDS
education in secondary
schools, as perceived
by experts?

4.4 Which key mechanisms limit HIV/AIDS education in secondary schools, as perceived by experts?

Approach

Through semi-structured key informant interviews, we aim to gain an in-depth understanding of the primary factors limiting HIV/AIDS education in secondary schools in Uganda, as perceived by experts. Key informants were contacted through the research team and FLIA's existing network and snowball sampling. To maintain consistency and a systematic approach, an Interview Guide was created (see Appendix 4). This section aims to answer the research sub-question, "What are the key mechanisms limiting HIV/AIDS education in Uganda, as perceived by experts?"

Comparing school systems

Overall, the interviews addressed key factors impacting teaching outcomes, including the institution's objectives, the difference between each school's knowledge and perception of the role of teachers, and the curriculum. The quality of HIV/AIDS education in Ugandan secondary schools is highly dependent on the type of institution. Uganda's education sector comprises international, government, private, and faith-based schools, all of which differ in their teaching of HIV/AIDS education. The differences between these institutions lead to fragmentation in HIV/AIDS education across Uganda.

Moreover, the perceptions and influences of parents and families highly influence

HIV/AIDS education. The teachers must prioritise the wants and needs of the parents over the discussion of stigmatised topics. Interviewee 7, who works at an international school, stated that HIV/AIDS is not included in lessons. In the international school system, parents often come from abroad and tend to be more sensitive to teaching HIV/AIDS to their children. In contrast, in a previous government school where this interviewee worked, HIV/AIDS education was highly emphasised.

Additionally, he noted that parents in the national school system were more likely to have an open mind for teaching HIV/AIDS in the classroom to fill the knowledge gaps, as discussing sex-related subjects between parents and children is seen as improper. Faith-based institutions also tend to stray away from HIV/AIDS education because the information may go against the norms or beliefs of these families. Lastly, a critical difference in HIV/AIDS education is whether a school uses the national or the international curriculum. International schools often use the Cambridge Curriculum, which does not emphasise HIV/AIDS education.

Another gap is teachers' lack of knowledge or unwillingness to discuss HIV/AIDS. Several interviewees noted that teachers tend to avoid details and quickly move past stigmatised topics. Moreover, all key informants who went through

primary and secondary school in Uganda stated they were not tested on HIV/AIDS material that was discussed. Lack of testing on HIV/AIDS in primary school may therefore weaken the retention of HIV/AIDS information, which is critical during adolescence.

A major loophole in Uganda's education policy is that there is no mandate for schools, especially non-state-funded schools, to implement important health topics such as HIV/AIDS. Without an enforcement mechanism, there is no accountability. According to Interviewee 4, "People just cherry-pick parts of the policies that they feel should be the best and just run away with them. Even if it doesn't help in terms of concrete achievement of the goals that have been set by the policies". This amplifies the fragmentation of the HIV/AIDS response in the country, as it hampers the provision of knowledge to adolescents.

HIV/AIDS education is often taught in primary schools, primarily due to the high dropout rates among Uganda students. According to Interviewee 7, "If this information is given early, it keeps a learner or a citizen at an early age to know [HIV] exists and how to go about these challenges they face". Despite the advantages of starting education on HIV/AIDS in primary school, omitting these topics in secondary schools reduces the impact and behaviour changes. During secondary school, adolescents become increasingly curious and engage in sexual experimentation. As Interviewee 8 stated, "There was a mismatch of information and the lived

realities of the stages [of life]". While teaching HIV/AIDS in primary school is important, continuing these lessons into adolescence is vital.

HIV/AIDS at the periphery of mainstream education: NGOs and International organisations

Often, HIV/AIDS education is stationed at the periphery of mainstream education across schools in Uganda. All interviewees who have worked or gone through Ugandan secondary schools stated that textbooks and learning materials do not contain information on HIV/AIDS. All cases where HIV/AIDS was discussed were in NGOs or, as Interviewee 8 pointed out, outside of the classrooms in skits and plays. HIV/AIDS education is usually held as an extracurricular activity through NGO support or events organised by Parent-Teacher Associations. Keeping HIV/AIDS education on the periphery of a student's education limits the effectiveness of critical information absorption for young people. Nevertheless, interviewee responses and experiences varied, once again evidencing the fragmentation of HIV/AIDS education in Uganda.

Stigma & culture

A key theme throughout all interviews is that stigma has not lessened but continues evolving and changing. For example, some people in Uganda may associate a particular body type or shape with someone on ART or PReP. Interviewee 3 noted,

"In a way, norms were stronger than the fact that they might get HIV and it was treatable, so it's just changing, you know, with new treatments coming available, increasing awareness is changing, but I don't think we can ever really get rid of it because it is still associated with kind of risky behaviours kind of favours, which often go against the norms in many of these societies."

Additionally, both ART and PReP both have very similar packaging. This dissuades people from taking PReP, fearing that peers may believe that they are already infected with ART. Interviewees stated that ART and PReP are not discussed in schools and that they learnt about treatment options following graduation.

There is also the issue of sensitive cultural beliefs, where in some communities, sex education is taboo, and discussions about safe sex are not allowed. Some interviewees noted how discussions of condom use and other contraceptives are seen as "immoral" or "not Ugandan". While persistent across the country, these attitudes are particularly prominent in rural areas. Interviewee 6, a community leader, and former secondary school student in Kampala, stated, "The schools don't comply with the culture of the learners". The stigmatisation of HIV/AIDS is a particularly pressing issue for girls. This is partly due to cultural norms and gender roles, which often leave women and girls with less power to negotiate safe sex with their partners. Without the ability to assert themselves in these situations, they may be more likely

to engage in risky sexual behaviours that increase their vulnerability to HIV/AIDS.

The impact of the COVID-19 pandemic

According to all interviewees, the impact of the COVID-19 pandemic was much more pronounced for secondary school students as opposed to primary school students, for reasons including high drop-out rates, unwillingness to return to school, teen pregnancies, and negative mental health effects. Classrooms protect young people from distractions, including household responsibilities, predatory adults, and other dangers outside the school walls. Many young people were exposed to violence in the home and dangerous community members. The psychological impact on students and teachers was at the forefront of many of the interviewees' minds. With many parents out of work and isolated in the home, Ugandan children, particularly in vulnerable or low-income households, faced violence and abuse. Several interviewees noted that the pandemic's impact on youth vulnerability was particularly prevalent for adolescent girls. During the pandemic, many parents married off their daughters to make some money since many lost their jobs and had lower household incomes. In most cases, marriage means the end of a girl's education. Several interviewees noticed the increase in teen pregnancies during the pandemic.

Building off the literature review findings, many students see less value in returning to school post-pandemic. Students who

are now two or three years older than they were at the start of the pandemic feel shame in returning to school being in the same classroom with younger students and as though they do not belong. Moreover, Interviewee 4 noted that many young people they have spoken to see less value in returning to school, given that many of them have found means of making an income. Since they are now supporting themselves with an income, returning to a classroom they have not seen in over two years seems much less important.

The pandemic significantly reduced the accessibility of healthcare. Many young people travel to neighbouring villages or towns to receive their HIV medication or services; however, the reduction in transportation options during the pandemic meant that many young people stopped taking their medication due to the stigma and worry about people in their communities finding out their diagnosis. For example, Interviewee 1 shared the example of a young boy who stopped receiving medication due to the fear that a nurse at the local health clinic may be friends with their peers.



5. Recommendations

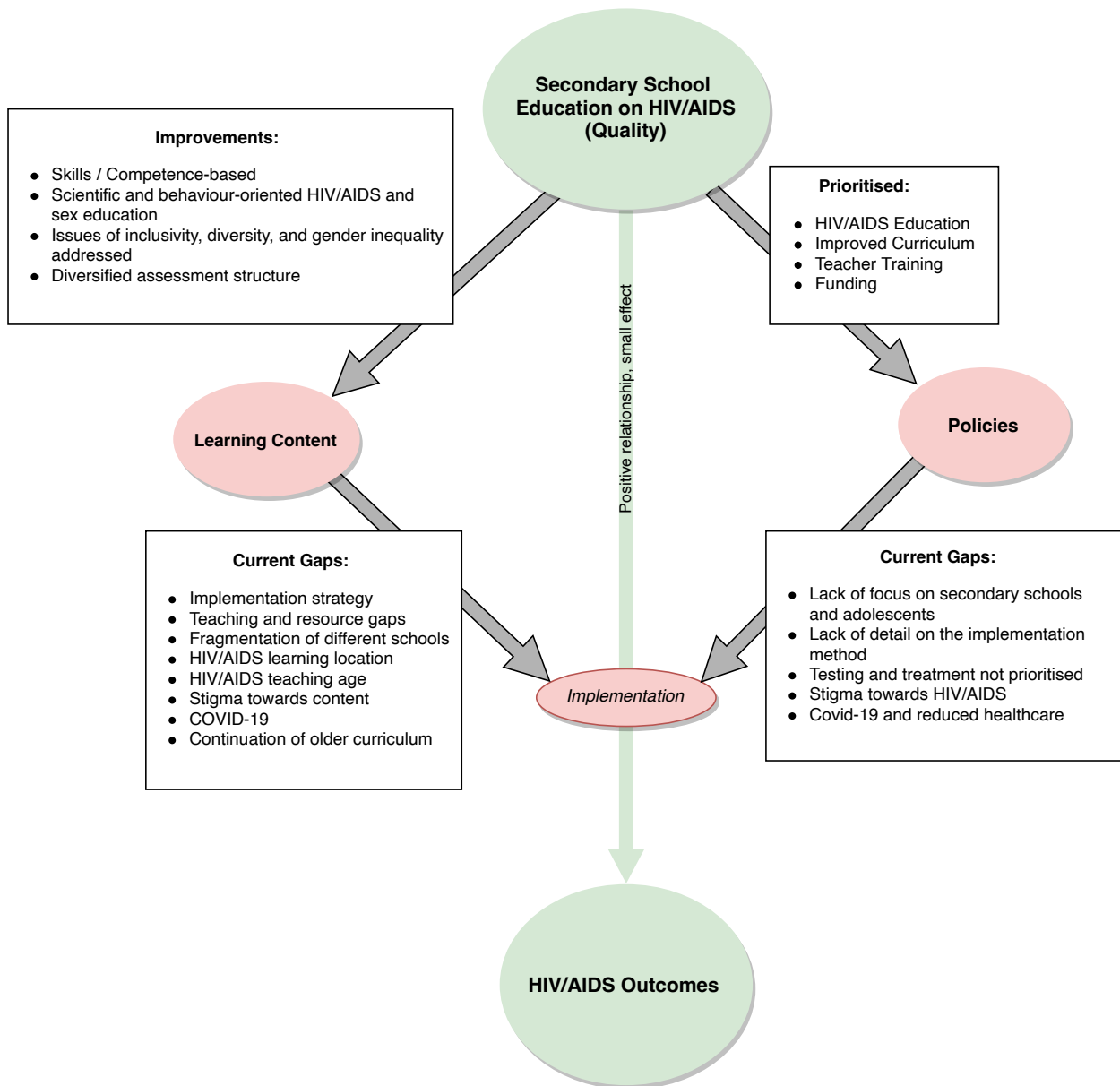


Figure 3: Overview of improvements and current gaps in the national curriculum and HIV/AIDS education policies

5. Recommendations

This study centred on the question of how and through which mechanisms secondary school education has contributed to Uganda's current HIV-related health outcomes. Using a mixed methods approach, we established both the positive developments in secondary school education and the current gaps that hinder secondary school education from having a more significant contribution. Most of the current gaps are seen in the implementation of the new lower secondary school curriculum and the supporting policies, largely due to stigma, knowledge and resource gaps and the recent COVID-19 pandemic. For secondary school education on HIV/AIDS to improve its role in fostering the necessary behaviour changes required for overcoming the HIV/AIDS epidemic, it is crucial that Ugandan policies tackle these gaps.

In Figure 3, we outline the overall analytical findings of the four sub-questions in this study, illustrating how national policies and national secondary school education have improved over the years as well as the gaps limiting successful implementation and the potential role of secondary school education in overcoming the epidemic. To overcome these gaps, the findings illustrated in Figure 3 provide a useful overview of complex, intersectional factors that should be addressed in future policies.

List of recommendations

- **HIV and education policies should increase their focus on targeting secondary schools and the youth and integrating HIV/AIDS education into the classroom rather than relying on NGOs and extracurriculars.** Currently, health topics, including HIV/AIDS, are not discussed, or tested in secondary school classrooms. The youth constitute over half of the population and are particularly vulnerable to risk-taking behaviours, including sexual experimentation. Their vulnerability to HIV/AIDS has also severely increased since the COVID-19 pandemic, which led to increased dropout rates, teenage pregnancies, and an escalation of gender disparities.
- **Policies on HIV and education need to include more detailed information on their policy implementation strategies.** Currently, there is a massive disconnect between the ambitious goals and visions of the policy documents, and their implementation, with little information on their implementation methods.
- **More efforts should be undertaken to address the issue of stigma around HIV/AIDS education in secondary schools.** Although policies already address the issue of stigma around HIV/AIDS, it continues to pose

a significant danger for the youth that results in negative HIV/AIDS outcomes. It prevents them from engaging with the necessary HIV/AIDS material in schools and affects their likeness and willingness to get tested as they fear facing social shame. While HIV/AIDS stigma cannot be eradicated, important steps can be taken to weaken its impact on Uganda's youth and future generations.

- **Policies need to address the specific effects of COVID-19 on the HIV/AIDS and secondary school education nexus.** It has increased drop-out rates and teenage pregnancies and hampered the already lengthy implementation of the very promising new lower secondary school curriculum. It strained the resources required to implement the new curriculum and halted teacher training programs, encouraging the use of the older curriculum. The long lockdown also meant that adolescents did not engage with HIV/AIDS education material for two years. Strategies can include radio campaigns, targeted outreach, and recruitment efforts, offering flexible learning options, and implementing catch-up programs.
- **The government must implement strategies and campaigns to get adolescent kids back into school.** It is important for kids to see the value in education because many are currently settling for small money-making opportunities, limiting their future opportunities and their exposure to HIV/AIDS-related education.
- **Policies should consider the fragmentation of Uganda's secondary school circumstances and should adopt localised approaches at the local government level, incorporating community voices to provide more context-specific solutions.** Uganda's education landscape is fragmented, meaning different schools have different needs and problems which affect secondary school education on HIV/AIDS differently. It is important that the different needs are addressed. For example, strategies can include leveraging local NGOs and community-based organisations, conducting community consultations, incorporating community perspectives into the curriculum, and creating more bottom-up community-led governance structures.



6. Conclusion

6. Conclusion

This report provided insights into the relationship between the quality of secondary school health education and HIV/AIDS outcomes in Uganda. A combined approach analysing the Demographic and Health Survey data, national policy documents, secondary school curriculums, and key informant interviews allowed for a comprehensive and nuanced analysis of the existing gaps and opportunities for education quality improvement.

This report highlighted several key gaps across the Ugandan education sector, ranging from the learning content, teacher training and support, addressing stigma, the involvement of key stakeholders, and more. This research is particularly timely given Uganda's growing adolescent youth population and, more broadly, Sub-Saharan Africa.

Moreover, the study also builds an understanding of the increased challenges

posed by the COVID-19 pandemic, particularly how it heightens youth vulnerability for those already at risk, deepening societal divisions and fragmentation. This paints a concerning picture for the future of the population if key issues are not addressed.

Finally, the study outlines important policy recommendations for overcoming secondary school education's current gaps and limitations on HIV/AIDS. These provide concrete suggestions for improving the implementation of the new lower secondary school curriculum and well-supporting policies.

Overall, this research underscores the urgent need for policymakers and educators to address the quality of secondary school health education to improve HIV/AIDS outcomes and support the promotion of better health and support for young people for decades to come.



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7. Bibliography

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8. Appendix

8. Appendix

Appendix 1. Quantitative Analysis Methodology

Focusing on one of the most acute health issues in Sub-Saharan Africa - the HIV epidemic, one way to test for the effect of school education on health outcomes is to investigate whether more years of schooling lead to better knowledge on HIV and higher pervasiveness of positive behavioural patterns that help to curb the spread of the disease. There have been multiple studies of association between educational attainment and HIV outcomes, expressed in terms of HIV testing uptake (Sambah et al., 2020; Muyunda et al., 2018; Glick & Sahn, 2007), knowledge about the ways of HIV prevention (Glick & Sahn, 2007), HIV counselling service utilisation (Sambah et al., 2020; Wringe et al., 2008; Hutchinson & Mahlalela, 2006), the prevalence of attended child delivery (Merdekios & Adedimeji, 2011), etc. For example, Astawesegn et al. (2022) found that maternal education made the second largest contribution (after household wealth) to socioeconomic inequality in prenatal HIV testing in East Africa. Merdekios & Adedimeji (2011) found a significantly positive association between female education and knowledge about the importance of voluntary counselling and testing for HIV. Finally, Glick & Sahn (2007) show a positive and significant association between 4- and 8-year education on knowledge about HIV-prevention methods across Sub-Saharan Africa. Our report extends the findings of Glick & Sahn (2007) about the effect of school education in Uganda on testing for HIV by using the latest data and by performing heterogeneity analysis across different age cohorts.

We investigate whether educational attainment can be a good predictor of testing for HIV, while testing is one of those socially desirable actions related to prevention of disease and infection spread. It is suggested that if more years of education cause better outcomes in this area, this could potentially indicate that the introduction of HIV narratives in the school curriculum was successful in influencing young people's behaviour and perceptions about HIV. Although this report predominantly focuses on secondary education in Uganda, the quantitative part looks at different levels of education due to data constraints and design of the identification strategy. This, however, doesn't prevent us from using the findings of this section to guide further qualitative analysis of secondary education in this report. We run a series of ordinary least squares (OLS) regressions to find whether people in different age groups test for HIV more when they have more years of schooling. Keeping in mind that different age cohorts of Ugandans were potentially exposed to varying educational content - particularly concerning HIV prevention - when they were at school, the variation in average testing responsiveness to years of schooling across different age groups can serve as a measure to estimate effectiveness of the new HIV content that was introduced to the school

curriculum in response to the HIV epidemic in Uganda and which older age cohorts had not been exposed to.

The data used for our analysis comes from the Uganda Demographic and Health Surveys (DHS) of 2011 and 2016. Some descriptive statistics of the data are reported in Tables A1 and A2. In 2016, the proportion of Ugandans who had ever tested for HIV was systematically higher for females (over 90%) than for males (not higher than 85%) across different age cohorts over 20. For the youngest cohorts, this figure was much lower - roughly half of the population under 20 had ever tested for HIV. For those who had tested, the number of months since the last test increased with age with almost no exception, with the average of 5.8 months for both males and females. Finally, male Ugandans had been constantly having more years of schooling than females across different cohorts. Nevertheless, younger cohorts had received more education on average than the older ones both among females (4.2 years of schooling for the 45-49 cohort against 7.9 for the 20-24 cohort) and males (6.9 years of schooling for the 45-49 cohort against 8.3 for the 20-24 cohort). It is also important to note that the DHS sample size for the male population in Uganda was considerably smaller than for the female population, which caused larger confidence intervals for male regression coefficients, as shown below.

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Share of respondents who have ever been tested for AIDS (v781), %	56.3	92.8	96.8	95.4	92.7	92.8	90.5	85.4
N	4,276	3,782	3,014	2,600	2,029	1,621	1,184	18,506
Mean number of months since the most recent HIV test (v826a)*	5.5	5.6	6.0	6.0	6.2	6.2	6.1	5.8
N	2,169	3,122	2,482	2,027	1,472	1,093	704	13,069
Mean number of years of education (v133)	6.6	7.9	7.6	6.3	5.1	4.7	4.2	6.5
N	4,276	3,782	3,014	2,600	2,029	1,621	1,184	18,506

Source: Uganda DHS 2016. The codes of respective DHS variables are reported in brackets. Weights provided in DHS dataset were applied.

* Includes only observations for which the precise number of months was reported in DHS. Respondents who tested 24 or more months before the DHS interview are not included.

Table A1. Descriptive statistics for the key variables of interest disaggregated by 5-year age groups (females).

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Share of respondents who have ever been tested for AIDS (mv781), %	46.9	76.8	85.7	85.1	82.9	81.3	79.7	73.1
N	1,270	944	740	737	497	492	363	5,336
Mean number of months since the most recent HIV test (mv826a)*	5.8	5.2	5.8	5.4	6.4	6.5	6.3	5.8
N	478	634	545	530	335	331	203	3,226
Mean number of years of education (mv133)	6.6	8.3	8.7	8.4	7.4	6.9	6.9	7.6
N	1,270	944	740	737	497	492	363	5,336

Source: Uganda DHS 2016. The codes of respective DHS variables are reported in brackets. Weights provided in DHS dataset were applied.

* Includes only observations for which the precise number of months was reported in DHS. Respondents who tested 24 or more months before the DHS interview are not included.

Table A2. Descriptive statistics for the key variables of interest disaggregated by 5-year age groups (males).

For the series of OLS regressions that we run, the general regression equation is as follows:

$$HIVvar_i = \alpha + \beta_1 Education_i + \beta_2 X_i + \varepsilon_i,$$

where $HIVvar_i$ is the dependent variable represented by the number of months since the last HIV test reported by an individual (DHS variables v826a for females and mv826a for males). $Education_i$ is the independent variable represented by a measure of educational attainment of an individual expressed as the number of years of schooling (v133 and mv133) or the highest level of educational attainment (v106 and mv106) that can take the value of "no education", "primary", "secondary" or "higher". X_i is a set of control variables, including wealth index expressed as wealth quintile (v190 and mv190), ethnicity (v131 and mv131), religion (v130 and mv130), type of place of residence (v025 and mv025) and region (v024 and mv024). ε_i is the error term. Standard errors are robust to heteroscedasticity. Weights provided in the surveys are applied to every regression.

Firstly, using the 2016 DHS we regress the number of months since the last HIV test reported by the respondent on the number of years of schooling for each of the 5-year age cohorts within the 15 to 49 age group. Due to the specificity of the DHS data collection methodology, the sample is limited to individuals who tested for HIV within two years before the interview, as the exact number of months since the last test was recorded for them only. Observations corresponding to those individuals who reported testing "two or more years" before the interview were dropped. Here, we don't use the probability of ever getting tested - available throughout more versions of DHS - as a dependent variable because of the specificity of cohort analysis. Older people are more likely to have tested for HIV per se, while testing frequency concerns only those who have previously tested at least once, therefore partially eliminating this age bias.

Appendix 2. Robustness Checks

As a robustness check, testing this association with 3-year age bins shows results similar to the main findings, with the cut-off at the 27-29 age bin and a slightly larger coefficient magnitude for some age groups (Figure A1). The only exception is the 21-23 bin for males with insignificant coefficients. Testing the association with the highest level of education as an independent variable, instead of years of schooling, shows identical results. It needs to be mentioned that across different regressions, the coefficient for the youngest age bin might be distorted because these people are most likely not to have reached their last year of education.

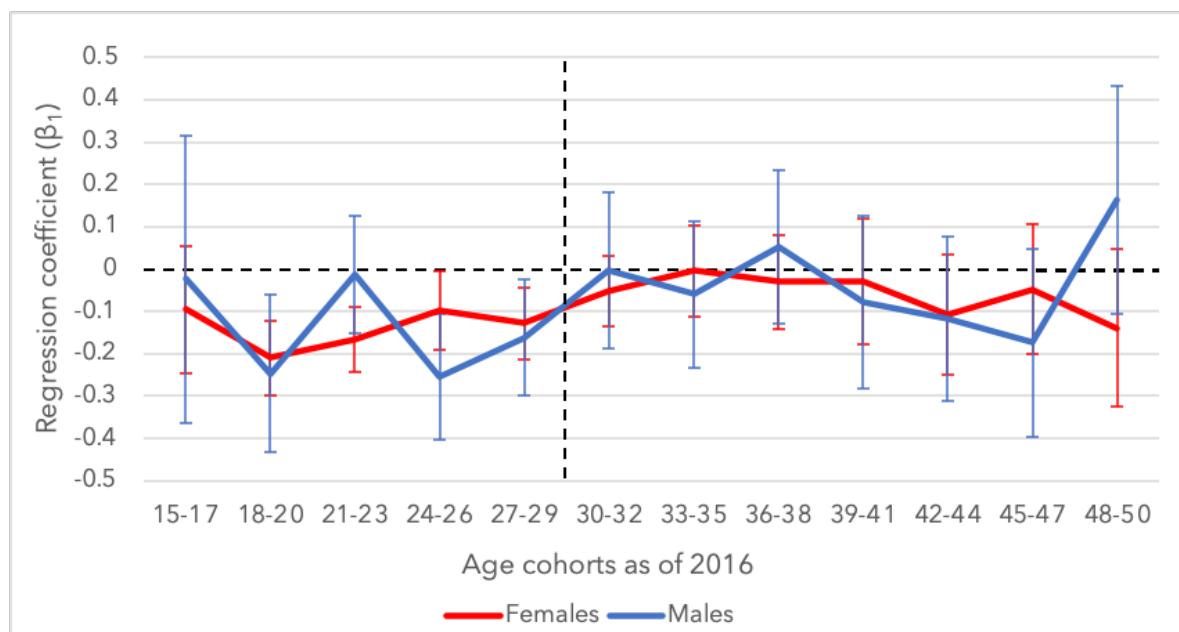


Figure A1. Months since last HIV test regressed on education in single years for different age cohorts as of 2016 (3-year bins)

Appendix 3. Limitations

Quantitative Analysis Limitations

Our approach has some other important limitations that don't allow us to make strong causal claims about the shown association between education and testing for HIV. First, when discussing the influence of being of a particular age, we assume that this effect is constant for people from different birth cohorts living through the same periods of their lives. It is likely that age-specific behavioural patterns indeed hadn't changed significantly between years 2011 and 2016, when the two surveys were conducted. Nevertheless, such aspects as technological change, increasing life expectancy or expansion of universal school education in Uganda might have amended some of the age-specific behaviours,

which could be mistakenly taken for the cohort effect and doesn't allow us to unambiguously attribute younger people's testing responsiveness to education to the cohort-specific exposure to education. Second, the analysis doesn't account for mortality, i.e., we are unable to directly trace the association between education and testing for HIV of those people who died, especially because of HIV, before the survey was conducted, which creates some sort of selection bias. However, this effect is likely to be the strongest among older age cohorts, which doesn't undermine our analysis severely. Finally, our method doesn't allow us to fully rule out the possibility of simultaneity.

Curriculum and Policy Analysis Limitations

Both the curriculum and policy analyses are subject to interpretation biases internalised by the author. That is, by analysing the discourse in these documents, it is possible that the analytical conclusions may reflect certain internalised biases. It is important to recognise the positionality of the authors, neither being of Ugandan descent. Nevertheless, by enriching the analysis with secondary sources, we tried to overcome this limitation as much as possible. However, it should also be acknowledged that relying on secondary sources means relying on the viability and creditability of other researchers' insights. However, this limitation was also lessened by coupling the insights gained with more than one source.

Key Informant Interview Methodology and Limitations

The Interview Guide was adapted to suit the knowledge and expertise of each individual key informant and all geared towards answering the research sub-question, "What are the key mechanisms limiting HIV/AIDS education in Uganda, as perceived by experts?" Interview questions catered to the expertise of the informant. It is imperative to reach informants who are sensitive to and familiar with local cultural norms and behaviours, given the sensitivity of discussing HIV/AIDS in Uganda. The open-ended questions sought to understand the contemporary factors limiting HIV/AIDS education in secondary schools. The first set of questions developed a general understanding of informant perceptions of the key challenges to HIV/AIDS education. The following questions were narrowed into more probing questions aimed at the primary research question. This interview style can improve the comfort level of the informant leading to the emergence of unforeseen subjects that could contribute to the creation of more profound insights into their perceptions and experiences (Bauman et al., 2002).

The LSE consultants and FLIA team recruited informants from their existing network and through snowball sampling. The key informant interviews engage with various researchers, policymakers, former students, and community leaders to help build an understanding of the most pressing challenges and the current landscape of secondary school health education in Uganda. The key informant interview method develops a more nuanced

understanding of HIV/AIDS in education in Uganda and helps bridge the gap in research due to the limitations of data availability and quality (Dwyer-Lindgren et al., 2019; Gona et al., 2020), and allows informants to share unrestrained and new insights. The interviews were conducted in English via Zoom video calls, ranging from 45 to 60 minutes at a date and time of the participant's choosing. Interviews were all recorded and then transcribed verbatim. Braun and Clarke's (2006) reflexive thematic analysis method was used after data collection. This method divides data analysis into six key stages to identify meaning and patterns from the interviews with the goal of finding themes (Braun & Clarke, 2006). This method emphasises the active role of the researcher and requires ongoing reflexivity.

The primary limitation of the key informant interviews is the data collection method which may lead to sampling bias. The use of the consulting team and FLIAs network may create bias in the responses and perspectives heard in this report. Snowball sampling relies on informants to connect the researchers with others in their network, skewing the scope of the interviewees. Secondly, there may be unequal power dynamics due to the positionality of consultants outside the community and the topic's sensitivity. The distance from the community as researchers may increase objectivity but may also create asymmetrical power dynamics. All participants provided written informed consent before interviews and were made aware of the data collection purpose and process of research. Informant data was made anonymous upon request and only contained position title and area expertise. Lastly, using Zoom instead of in-person interviews may limit the interpretation of non-verbal communications, such as body language and emotional cues (Grey et al., 2020).

Appendix 4: Data Management Plan

The following data management plan outlines the procedures and practices that have been followed to manage the key informant interview information. This plan is developed to ensure that the data is handled appropriately, stored securely, and made accessible only to the LSE consultancy team.

Data Collection

The interviews were conducted according to the recommendations of the LSE for conducting interviews. This includes obtaining informed consent from the interviewees, recording the interviews, and transcribing the interviews verbatim.

Data Storage

All data collected from the key informant interviews have been stored securely on the LSE cloud-based storage system. The cloud-based storage system provides secure and reliable storage that can be accessed from anywhere with an internet connection. The data was

stored on a password-protected cloud-based storage system to ensure that only the four consultancy team members can access it.

Password Protection

The cloud-based storage system used to store the data will be password protected to ensure that only the LSE research team can access the data. Only the research team members who are responsible for data management have access to the password. Additionally, interviewee information is password-protected separately to protect their privacy.

Data Retention

The data will be retained for three years after the completion of the research study. After three years, the data will be securely destroyed to ensure that it cannot be accessed or used in any unauthorised manner.

Appendix 5: Interviewee Background

Interviewee 1:

Interviewee 1 is a social anthropologist with a strong health and anthropology research background. They have conducted extensive research in various African countries, mainly focused on Uganda. Their research looks at the broader aspects of people's lives and livelihoods that affect their health and health-related behaviours. Since the 1980s, they have researched the social aspects of HIV, particularly its impact on communities and people's lives and livelihoods.

Interviewee 2:

Interviewee 2 is an accomplished psychologist and anthropologist concentrated on disability research and inclusive spaces. With over 20 years of experience in Uganda, they have been involved in various research studies, including inclusive education, HIV/AIDS, and psycho-social well-being of vulnerable youth and persons with disabilities. They are currently working on inclusive education projects in primary schools and studying the impact of COVID-related measures on vulnerable populations.

Interviewee 3:

Interviewee 3 is a social anthropologist with extensive experience working at the research-policy interface in Africa, Asia, the Middle East, Latin America, and the Caribbean. Their research focuses on health and well-being's social and political determinants, particularly poverty, inequality, gender, vulnerability, and identity. Their research includes exploring

barriers to access and provision of health services, the effects of entrenched social and gendered norms, and the use of multilevel approaches to strengthen health systems. Their work in Africa has mainly been in Uganda, but also across countries in East, West, and Southern Africa.

Interviewee 4:

Interviewee 4 spoke about their experience as a student in a government-funded institution, both rural and urban. Having studied high school less than ten years ago and being able to pull from the experience of their peers and friends in Uganda, they spoke to the critical challenges in health education and current challenges post-COVID-19. Their research and professional experience focus on politics, livelihoods, and migration in fragility, conflict, and violence. They have experience working on projects across several organisations, including with the Government of Uganda and several UN agencies.

Interviewee 5:

Interviewee 5 works as a Statistician at the Uganda Bureau of Statistics and is responsible for producing and disseminating official government statistics. They have diverse experiences in Uganda, working for both the government and the private sector.

Interviewee 6:

Interviewee 6 is an entrepreneur who works with young students in Uganda by developing innovative fintech and edtech solutions. Having gone through the Uganda education system less than 10 years ago and through their work with various Ugandan secondary schools, they were able to speak to the key challenges and landscape of the secondary school in Uganda. Working mainly in the Central Region, they are dedicated to improving access to quality education for historically excluded groups. Through their work, they are helping to bridge the gap between traditional education and the rapidly evolving digital landscape, giving young people the tools, they need to succeed in the modern world.

Interviewee 7:

Interviewee 7 works as a secondary school teacher in an international school near Kampala. They have previously worked in a government school, which may have provided them with a unique perspective on the education system. The interviewee's extensive background in creating curricula and teaching in various Ugandan schools provided a unique perspective on the variations between secondary schools in Uganda.

Interviewee 8:

Interviewee 8 is well-positioned to offer insights into the student experience in government schools in Uganda, particularly in the Mbarara region. Being close to a city, the interviewee provided a perspective on the challenges students face in both rural and urban settings.

Interviewee 9:

Interviewee 9 is a public health researcher focused on women's health projects among adolescents in Wakiso District. They have worked on secondary school interventions collaborating with NGO-led training of trainers on education and delivering essential health products and services, including basic improvements to school water, sanitation, and hygiene facilities. Their research provides valuable insights into improving the health and well-being of girls in Uganda through innovative interventions in the education system.

Interviewee 10:

Interviewee 10 is a PhD candidate researching how large transnational global health research programmes conducting research in Uganda but managed and developed externally produce knowledge. They are concerned with how inequalities in research design, implementation, analysis, and findings-dissemination shape what is known about HIV/AIDS.

Appendix 6: Interview Guide

Key Informant Interviews - FLIA Consultancy Project

SQ4: What are the key factors limiting HIV/AIDS education in secondary schools in Uganda, as perceived by experts?

Aim of research question:

To understand why schooling has a small effect on HIV-related behaviour among youth despite good curriculum and good policies

Find out what other factors influence the implementation/quality of the education around HIV/AIDS in secondary schools, such as stigma, infrastructure, knowledge gaps, gender, learning environment, drop-out rates, and COVID-19.

Find answers that illustrate the situation pre-COVID and post-COVID

Pre-interview

Note: Set up all interviewers as co-hosts. Create a copy of the interview guide for each interviewee to cater to their expertise.

Introduction

Interviewer 1: Hello, this is Megan Sieroka and I will be leading the interview [Interviewer 1]. I am a student at LSE and consultant at the Firoz Lalji Africa Institute. Thank you for joining us today. [Interviewer 2] is also here with me and will be supporting the interview and may also be asking questions. I will let her introduce herself.

Interviewer 2: *Introduces herself.*

Interviewer 1: As mentioned in our email, our team, alongside the Firoz Lalji Africa Institute at LSE, is conducting a project that examines how the quality of secondary school health education affects health outcomes in Uganda.

Our goal is to identify the key mechanisms limiting a more comprehensive HIV/AIDS education in secondary schools.

To achieve this goal, we are conducting interviews with individuals who have engaged in work in HIV/AIDS and education in Uganda. We want to explore the strengths and challenges of engaging various types of stakeholders and identify the most effective methods for improving HIV/AIDS education in secondary schools. Your perspective will help us gain a more holistic and nuanced understanding of HIV/AIDS in Uganda, given your experience in this area of research and how it differs from other key informants that we are interviewing.

Participation is **voluntary**. You have no negative consequences if you decide not to participate in this study. If you decide to take part but then later you change your mind, you can let me know by April 18th - you will not have to give any explanation why. It is also fine if you feel that you don't want to answer any specific questions - you can just tell me, and we will move on.

Interviewer 1: Before we begin, we want to let you know that we will be recording this interview, which will be transcribed to ensure that all the information we document is accurate. Results from interviews will not specifically identify individuals if you have indicated in the consent form that you will remain anonymous. This recording will be saved to the LSE cloud, will be password protected, and will only be accessible to members of our consulting team. The results will be reported in aggregate and by the types of stakeholders that have engaged.

Do you have any questions? Is it okay to begin the interview?

Key Informant Interview Questions

1. Opening Questions

Note: *For each informant, repeat questions a - b*

Interviewer 1:

1. To begin, can you describe your connection to HIV/AIDS research in Uganda.
 - a. What region(s) of Uganda do/did you work?
 - b. Were these mainly rural or urban areas?
 - c. Were the people you studied typically upper, lower, or middle class?
2. What types of schools are typical in this region? (e.g., state schools, religious schools, etc.)
3. How long have you worked in this area?

2. Key questions

Key Factors (Time: 20-minute cut-off)

1. Can you describe the current state of HIV awareness and education in Uganda?

Note: If the interviewee states positive results/state, probe further on each mechanism stated.

2. What key factors limit HIV/AIDS awareness amongst secondary school students?
 - a. You mentioned the factor ----- (factor).
 - b. Why is this one of the key mechanisms?

Note: Repeat questions for each factor mentioned.

3. What are the key strategies being used to tackle this limitation?
4. Besides the limited awareness, what are the key factors encouraging risk-taking behaviour amongst secondary school students?

Note: Distinguish between awareness and comprehensive education.

5. What are the biggest challenges in teaching this topic to students?
6. What are the key factors driving awareness of HIV/AIDS?
7. What are the key factors reducing risk-taking behaviour amongst secondary school students?
 - a. What has made [insert factor] successful?

8. What is the role of NGOs and international organisations in improving the teaching of HIV/AIDS in Uganda?
9. How has the COVID-19 pandemic impacted the outcomes of HIV/AIDS education across Ugandan secondary schools?
 - a. You mentioned the factor ----- (factor).
 - b. What can be done to overcome the factor of ----- (factor)?

Note: Repeat questions for each factor mentioned.

10. How did students out of school during lockdowns impact their vulnerability to HIV/AIDS?
11. Do you believe stigma remains a substantial part of the problem?
12. Has stigma changed in the past 40 or so years?
13. How has the increased access to ART treatments impacted stigmatisation of people living with HIV/AIDS?
14. How do cultural beliefs and practices impact the teaching of HIV/AIDS in the region, and what steps can be taken to address this?
15. Are there any gaps in the availability data on HIV/AIDS in Uganda? If so, what are they and how do they impact the ability to respond to the HIV/AIDS epidemic?
16. What are the challenges in collecting and analysing data on HIV/AIDS in Uganda?
17. What are some potential areas for improvement in data collection, analysis, and dissemination related to HIV/AIDS in Uganda?

4. Conclusions

Interviewer 1: Thank you very much for your time and for sharing your experiences with us.

Do you have any additional comments or insights about HIV/AIDS health education in Uganda?

Do you have any questions for us?

Again, thank you very much.

Have a good day.