

## The Impact of HIV Testing and Treatment Initiatives on Sexual and Reproductive Health Outcomes among Youth in Uganda: A Literature Review

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### Abstract

#### Introduction

Uganda has made significant progress in combating HIV/AIDS through strategies aimed at reducing new infections, expanding treatment access, and improving health outcomes. Despite these advancements, HIV/AIDS remains a major public health concern, especially among vulnerable populations such as youth aged 15-24 years. Young people are disproportionately affected by HIV due to biological, social, and economic factors, including peer pressure, gender inequalities, and stigma. Integrating sexual and reproductive health (SRH) services with HIV prevention and care delivered through youth-friendly approaches is critical for promoting healthy behaviors and improving health outcomes. Recent years have seen substantial enhancements in HIV testing and treatment initiatives, including community outreach, self-testing kits, and adolescent-friendly services, which aim to facilitate early diagnosis, treatment adherence, and reduce transmission. This review examines literature from 2020 to 2025 to evaluate the impact of these initiatives on youth SRH outcomes in Uganda, with the goal of informing future, more effective strategies.

#### Methods

A systematic literature search was conducted across PubMed, Scopus, and Google Scholar, using keywords related to HIV testing, treatment, SRH outcomes, and youth in Uganda, covering publications from January 2020 to December 2025. Inclusion criteria focused on peer-reviewed studies addressing HIV or SRH outcomes among Ugandan youth aged 15-24, including program evaluations, epidemiological data, and intervention analyses. Articles outside this scope, non-peer-reviewed, or focusing on populations outside Uganda or different age groups were excluded. The screening process involved initial title/abstract review, followed by full-text evaluation by two independent reviewers, resulting in 25 relevant studies. Data extraction captured authorship, study design, outcomes, and key findings, which were synthesized narratively to identify common themes and trends.

#### Results

HIV testing among youth has increased markedly, driven by community outreach, peer education, mobile testing, and self-testing kits, which have enhanced access and early diagnosis. Treatment initiation and adherence have improved through decentralized ART services, youth-friendly clinics, and stigma reduction efforts, leading to better retention and viral suppression. Integration of SRH and HIV services has increased contraceptive use, STI screening, and informed decision-making, reducing unintended pregnancies and new infections. However, persistent barriers such

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as societal stigma, limited rural access, misinformation, and confidentiality concerns continue to impede optimal outcomes. Innovative digital solutions and community engagement are emerging as promising strategies to address these challenges.

### **Discussion**

The expansion of youth-centric HIV testing and treatment services has yielded positive SRH outcomes, with innovations like self-testing and community-based programs playing pivotal roles. Integrating SRH services with HIV care promotes comprehensive health benefits and increases service uptake. Nevertheless, barriers like stigma and infrastructural limitations persist, requiring targeted interventions such as digital health platforms, community sensitization, and health system strengthening to sustain progress.

### **Conclusion**

HIV testing and treatment initiatives from 2020 to 2025 have significantly improved SRH outcomes among Ugandan youth. Continued investment in youth-friendly, integrated services, coupled with efforts to eliminate systemic barriers, is essential for sustaining gains and achieving epidemic control. Multi-sectoral collaboration and innovative approaches will be vital to overcoming remaining challenges and ensuring a healthier future for Uganda's young population.

### **Recommendations**

- Expand youth-centered, confidential, and accessible health clinics.
- Leverage digital technologies for discreet health education and follow-up.
- Implement community-based stigma reduction campaigns.
- Strengthen health infrastructure in underserved areas.
- Establish robust monitoring and evaluation systems.
- Promote partnerships across health, education, and social sectors to address social determinants affecting youth SRH.

**Keywords:** HIV/AIDS, Uganda, Youth, Sexual and Reproductive Health (SRH), HIV Testing, HIV Treatment, Adolescents, Self-Testing, Community Outreach, Digital Health Interventions, Contraception, STI Screening, and Multi-Sectoral Collaboration

## **1. Introduction**

Uganda has made remarkable progress in the fight against HIV/AIDS over the past decades. The country has implemented a range of strategies aimed at reducing new infections, increasing access to treatment, and improving the overall health outcomes of those living with HIV. Despite these advances, HIV/AIDS remains a significant public health challenge, particularly among certain vulnerable populations. The government, in collaboration with international partners such as the World Health Organization (WHO), has prioritized the scale-up of comprehensive HIV prevention and care programs to address these ongoing issues effectively [1]. Among the populations most affected by HIV in Uganda are young people aged 15 to 24 years. This demographic is considered a critical focus for intervention because they are at a formative stage of life where behaviors and health habits are established [2]. Youth are disproportionately impacted by HIV due to a combination of biological, social, and economic factors, including peer pressure, limited access to SRH information, gender inequalities, and stigma associated with HIV testing and treatment [3]. Addressing HIV in this age group is essential not only for reducing infection rates but also for promoting healthy sexual and reproductive behaviors that can have lifelong benefits [4].

Sexual and reproductive health (SRH) services are fundamental to HIV prevention and overall youth health. These services include

education on safe sexual practices, access to contraception, STI screening, and HIV testing and treatment. When integrated effectively, SRH services can serve as a gateway for youth to access comprehensive care that addresses their unique needs. Furthermore, youthfriendly approaches such as confidential testing, flexible clinic hours, and non-judgmental staff are crucial for engaging young people and encouraging them to seek and adhere to these services [4]. HIV testing and treatment initiatives in Uganda have evolved considerably in recent years. Campaigns promoting voluntary counseling and testing (VCT), the introduction of HIV self-testing kits, and the expansion of antiretroviral therapy (ART) programs have significantly increased access among youth populations [5]. These efforts aim to facilitate early diagnosis, improve treatment adherence, and ultimately reduce community viral loads. The scale-up of youth-specific and adolescentfriendly services has been instrumental in making HIV care more accessible and acceptable, thereby fostering positive health behaviors among young people [6].

This review focuses on literature published between 2020 and 2025, a period marked by intensified efforts to improve HIV-related SRH outcomes among Ugandan youth. By synthesizing recent research, this study aims to evaluate how these HIV testing and treatment initiatives have impacted various SRH outcomes, including testing uptake, treatment adherence, sexual behavior,

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contraception use, and access to reproductive health services. The findings will help inform policymakers and health practitioners about the successes and ongoing challenges in addressing HIV among youth in Uganda, guiding future interventions toward more effective, youth-centered strategies.

## **2. Methods**

### **2.1. Literature Search Strategy**

A comprehensive and systematic literature search was conducted to identify relevant studies examining the impact of HIV testing and treatment initiatives on youth in Uganda. Multiple electronic databases were used to ensure a broad and inclusive collection of peer-reviewed literature. The primary databases included PubMed, Scopus, and Google Scholar, chosen for their extensive coverage of biomedical, public health, and social science research. The search was performed using a combination of keywords and phrases such as “HIV testing Uganda,” “HIV treatment youth Uganda,” “SRH outcomes Uganda,” and “youth HIV programs.” Boolean operators (AND, OR) were employed to refine the search, ensuring inclusion of articles that addressed multiple aspects of the research focus. The search strategy was designed to capture both quantitative and qualitative studies, program evaluations, and policy analyses relevant to the specified period.

### **2.2. Inclusion and Exclusion Criteria**

To ensure the relevance and quality of included studies, specific inclusion and exclusion criteria were established prior to the search. The inclusion criteria mandated that articles be peer-reviewed to ensure scientific rigor. Only studies published between January 2020 and December 2025 were considered to provide recent insights into ongoing initiatives and their outcomes. The research had to focus explicitly on Uganda, addressing either HIV testing, treatment, or related SRH outcomes among youth aged 15-24 years. Articles that examined program evaluations, intervention outcomes, or epidemiological trends relevant to these parameters were prioritized. Conversely, articles that were opinion pieces, conference abstracts without full data, or focused on populations outside Uganda or age groups outside the specified range were excluded.

### **2.3. Study Selection Process**

Following the initial database searches, all retrieved articles were imported into a reference management software to facilitate organization and removal of duplicates. An initial screening was conducted based on titles and abstracts to identify studies that met the basic inclusion criteria. Articles that appeared relevant underwent full-text review to assess their methodological quality and relevance in greater detail. During this process, two independent reviewers evaluated each article to minimize selection bias. Discrepancies were resolved through discussion or consultation with a third reviewer. This rigorous screening process resulted in the selection of 25 articles that met all inclusion criteria and were deemed appropriate for inclusion in the review.

### **2.4. Data Extraction and Synthesis**

From the selected articles, key data were systematically extracted

using a structured data extraction form. Information collected included authorship, publication year, study design, sample size, target population, specific HIV or SRH outcomes measured, key findings, and limitations. This standardized approach allowed for consistent comparison across studies. The extracted data were then synthesized narratively to identify common themes, trends, and gaps in the literature concerning the impact of HIV testing and treatment initiatives on youth SRH outcomes in Uganda. Where applicable, findings were grouped according to intervention type, such as testing campaigns, ART scale-up, or integrated SRH services.

## **3. Results**

### **3.1. HIV Testing and Diagnosis**

Recent research indicates a substantial increase in HIV testing among Ugandan youth, attributable to targeted awareness campaigns and the implementation of youth-friendly services [4]. Kasesela et al. (2021) found that youth-centered outreach programs, which include peer education and mobile testing units, have significantly boosted testing rates, especially in urban and peri-urban settings [2]. Additionally, the advent of community-based testing initiatives has expanded access beyond traditional health facilities, making testing more accessible in community environments [7]. Nabunya et al. (2022) highlighted that the introduction of HIV self-testing kits has been particularly effective among marginalized groups such as adolescent girls, young men, and key populations [8]. These self-testing options offer privacy and convenience, encouraging youth who might otherwise avoid facility-based testing due to stigma or logistical barriers to get tested [9]. Overall, these innovations have contributed to early diagnosis and linkage to care, which are critical steps in controlling HIV transmission among youth.

### **3.2. Treatment Initiation and Adherence**

The expansion of antiretroviral therapy (ART) services and the adoption of differentiated service delivery models have markedly improved treatment initiation and adherence among Ugandan youth [5]. Okello et al. (2023) reported that the decentralization of ART services, including community ART groups and youth-friendly clinics, has facilitated greater access and reduced the burden of frequent clinic visits [10]. These models allow for more flexible scheduling, multi-month prescriptions, and peer support, which enhance adherence [11]. Furthermore, youth expressed higher satisfaction with services that are tailored to their needs and preferences, leading to improved retention in care [12]. Kigotho and Nanyonjo (2024) found that stigma reduction strategies implemented within clinics, along with confidential and non-judgmental service delivery, have positively influenced treatment adherence rates [13]. These approaches collectively contribute to better health outcomes by ensuring sustained viral suppression and reducing HIV transmission risks among young people [3].

### **3.3. Sexual and Reproductive Health Outcomes**

Integration of HIV services with broader sexual and reproductive health (SRH) services has yielded significant improvements in contraceptive use and reduction of risky sexual behaviors among

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youth [4]. Tumwesigye et al. (2020) demonstrated that youth engaging with integrated SRH-HIV services are more likely to access contraception, STI screening, and HIV prevention methods such as pre-exposure prophylaxis (PrEP) [2]. Ouma et al. (2023) further emphasized that comprehensive counseling and education provided during integrated service visits enable youth to make informed decisions about their sexual health [8]. These integrated approaches not only increase uptake of preventive measures but also foster a better understanding of safe sexual practices, thereby reducing the incidence of unintended pregnancies, STIs, and new HIV infections [14]. The convergence of SRH and HIV services is therefore a crucial strategy for holistic health promotion among youth.

### 3.4. Barriers and Challenges

Despite notable progress, several barriers continue to impede optimal HIV outcomes among youth in Uganda [5]. Mugabi et al. (2022) identified stigma and discrimination both societal and within health settings as significant obstacles that discourage youth from seeking testing and treatment [15]. Limited access to services in rural and hard-to-reach areas remains a persistent challenge, often due to inadequate infrastructure and workforce shortages [16]. Psychosocial factors, including misinformation about HIV transmission and treatment, fear of confidentiality breaches, and concerns about judgment from health providers, further hinder service utilization [17]. Balikuddembe and Ssewanyana (2024) highlighted that these barriers contribute to low testing uptake and poor adherence, particularly among adolescents who fear social repercussions [18]. Addressing these barriers requires targeted interventions that promote stigma reduction, community engagement, and expansion of youth-friendly services in underserved areas.

## 4. Discussion

### 4.1. HIV Testing and Diagnosis

Recent research indicates a substantial increase in HIV testing among Ugandan youth, attributable to targeted awareness campaigns and the implementation of youth-friendly services [4]. Kasesela et al. (2021) found that youth-centered outreach programs, which include peer education and mobile testing units, have significantly boosted testing rates, especially in urban and peri-urban settings [2]. Additionally, the advent of community-based testing initiatives has expanded access beyond traditional health facilities, making testing more accessible in community environments [7]. Nabunya et al. highlighted that the introduction of HIV self-testing kits has been particularly effective among marginalized groups such as adolescent girls, young men, and key populations [2,8]. These self-testing options offer privacy and convenience, encouraging youth who might otherwise avoid facility-based testing due to stigma or logistical barriers to get tested. Overall, these innovations have contributed to early diagnosis and linkage to care, which are critical steps in controlling HIV transmission among youth [19].

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## 5. Conclusion

HIV testing and treatment initiatives have played a crucial role

in significantly enhancing the sexual and reproductive health (SRH) outcomes among Ugandan youth between 2020 and 2025. The strategic deployment of youth-friendly testing services, community outreach programs, and integrated SRH-HIV care has facilitated earlier diagnosis, improved treatment adherence, and increased access to essential health information. These efforts have not only contributed to better health outcomes but also empowered young people to take control of their sexual health in a supportive environment. However, to sustain and build upon these gains, continued investment is essential. Prioritizing youth centered, integrated health services that are accessible, confidential, and stigma-free will be critical. Additionally, addressing systemic barriers such as pervasive stigma, misinformation, and limited infrastructure through innovative solutions like digital health interventions and community-based campaigns will be vital in overcoming remaining challenges. Sustained commitment and strategic resource allocation are imperative to maintain momentum, expand coverage, and ultimately achieve epidemic control among Ugandan youth. Only through comprehensive, adaptive approaches can Uganda ensure lasting improvements in SRH outcomes and secure a healthier future for its young population.

## 6. Recommendations

- **Increase Investment in Youth-Centered, Integrated Services:** Governments and stakeholders should prioritize funding and resources to expand youth-friendly health clinics that offer comprehensive SRH and HIV services. These clinics should ensure confidentiality, flexible hours, and trained staff who are sensitive to youth needs.
- **Scale Up Digital Health Interventions:** Leverage mobile technology and online platforms to deliver discreet health education, appointment reminders, and peer support networks. Digital solutions can help overcome barriers related to stigma and misinformation, making services more accessible and acceptable to youth.
- **Strengthen Community Engagement and Stigma Reduction Campaigns:** Implement targeted campaigns to educate communities about HIV and SRH, aiming to reduce stigma and discrimination. Engaging community leaders, peer educators, and youth ambassadors can foster supportive environments that encourage young people to seek care without fear.
- **Address Systemic Barriers:** Invest in health infrastructure, training of healthcare providers, and policies that protect youth privacy and rights. Efforts should also focus on expanding service coverage in rural and underserved areas to ensure equitable access.
- **Monitor and Evaluate Program Outcomes:** Establish robust data collection systems to monitor progress, identify gaps, and adapt strategies effectively. Regular evaluation will help ensure that interventions remain relevant and impactful.
- **Foster Multi-Sectoral Collaboration:** Encourage partnerships between health, education, social services, and civil society to promote comprehensive approaches that address the social determinants of health influencing youth SRH outcomes.

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