International Journal of Scientific Research and Engineering Development-– Volume 8 Issue 4, July-Aug 2025
Available at www.ijsred.com

RESEARCH ARTICLE OPEN ACCESS

Barriers and Facilitators to Retention of Adolescents in HIV Care at Kabuyanda Health Center IV, Isingiro District, Uganda

Clare Twinomugisha*, Bright Laban Waswa **(MSTAT)**, Prof. Gershom Atukunda **(PhD)****

*(Public Health, Bishop Stuart University, Uganda
claretwin95@gmail.com)
** (Public Health, Bishop Stuart University, Uganda, Directorate of Graduate Studies,Research and Innovation, Bishop Stuart University, Uganda
wlabright@gmail.com, gatukunda@beg.bsu.ac.ug)

--*************************----------------------------------

Abstract:

Background

Adolescents living with HIV face significant challenges in maintaining continuity of care despite free ART services in Uganda. Retention is essential for achieving positive health outcome and preventing further transmissions of the virus, but loss to follow-up remains high, especially in rural settings like Isingiro District. Despite interventions at Kabuyanda HCIV, such as home drug delivery and reminder calls, one in five adolescents drops out of care. Nationally, gaps persist in adolescent-friendly strategies. This study assessed barriers and facilitators to adolescent HIV care retention at this rural facility.

Methods

A qualitative cross-sectional study was conducted at Kabuyanda HCIV and 41 participants (adolescents in care and Lost to Follow up (LTFU), caregivers, and health workers) were selected through random sampling. Data were collected via semi-structured interviews, analysed thematically using NVivo 15, and interpreted using the Socio-Ecological Model (SEM) and Health Belief Model (HBM). Key outcomes included psychosocial, health system, and socioeconomic factors influencing retention.

Results

Unique findings included medication sharing between caregivers and adolescents, and burden of balancing school and care, and rejection of mobile clinics over fears of involuntary HIV disclosure and stigma issues at home which disrupted adherence. A notable facilitator was peer modelling by Young Adults with Positive Status (YAPS)**,** which enhanced trust, motivation, and emotional support. Other enablers were school-based systems, mobile services (when accepted), and flexible livelihood options. Persistent challenges involved stigma, food insecurity, health illiteracy, and stock-outs of supportive medications like Septrin.

Conclusion

Adolescent retention in HIV care is strengthened through peer-led interventions and contextual flexibility. Strategies must respect adolescents' privacy while scaling up adolescent-responsive and disclosure-sensitive services.

Keywords **—Retention, HIV, Barriers, Facilitators, Adolescents, Isingiro, Uganda**

--*************************----------------------------------

I. INTRODUCTION

Retention in HIV care among adolescents remains a significant global and national public health concern. Adolescents aged 10–19 years represent a uniquely vulnerable population within the HIV epidemic due to their developmental, social, and structural challenges that interfere with consistent engagement in care.

Globally, HIV has claimed over 40.4 million lives, with 39.0 million people living with HIV by 2022, two-thirds of whom reside in the WHO African region (WHO, 2023). Alarmingly, adolescents account for 1.7 million of these individuals, with sub-Saharan Africa contributing 90% of the adolescents living with HIV in WHO African Region (WHO, 2024; UNAID, 2022). In East and Southern Africa alone, 29% of adolescent girls and 19% of boys aged 15–19 have been tested of HIV positive in the last 12 months (UNICEF, 2025).

Despite improvements in access to antiretroviral therapy (ART), adolescent retention in HIV care remains suboptimal. A systematic review revealed that 15.07% of adolescents living with HIV (ALHIV) were lost to follow-up (LTFU), with those aged 15–19 years being 43% more likely to be LTFU than their younger counterparts (Leshargie et al., 2022). In Uganda, although ART is provided free of charge, about 20.2% of adolescents disengage from care (Nimwesiga et al., 2023). The consequences of poor retention include poor adherence, virologic failure, drug resistance, and increased morbidity and mortality (Mtisi et al., 2023; Geretti et al., 2024). Furthermore, disengagement from care hinders early detection of opportunistic infections, psychosocial support provision, and ultimately compromises national and global goals, such as Sustainable Development Goal 3 and the UNAIDS 95-95-95 targets (WHO, 2024).

Existing evidence suggests that retention in HIV care is affected by several interrelated barriers. Studies in Kenya, Tanzania, and Rwanda highlight how stigma, socioeconomic hardships, healthcare access, and systemic constraints lead to care disengagement (Kwena et al., 2023b; Mtisi et al., 2023; Uwamariya et al., 2022). For instance, adolescents living in rural areas often face long distances to health facilities and unaffordable transport costs, which hinder regular clinic attendance (Palk et al., 2020). Psychosocial challenges, including poor caregiver support, mental health burdens, non-disclosure, and internalized stigma, further exacerbate the risk of LTFU (Easton Twekambe et al., 2023; Adams et al., 2022). Although interventions such as decentralization and differentiated service delivery have improved adult retention, limited research has examined their effectiveness among adolescents (Maskew et al., 2022).

In Uganda's Isingiro District, Kabuyanda Health Center IV serves as a critical referral point for adolescent HIV care, yet clinic records reveal a persistent retention gap, with one in five adolescents reportedly disengaging from services. Despite implementing strategies like home delivery of ART, reminder calls, and adolescent-focused outreach, the reasons for LTFU remain poorly understood at the facility level. Moreover, few studies have qualitatively explored adolescents' and caregivers' perceptions of the structural and personal challenges affecting continued HIV care engagement in rural Uganda.

This study was thus conducted to explore the barriers and facilitators to retention in HIV care among adolescents at Kabuyanda Health Center IV, Isingiro District. Guided by the Health Belief Model and Socio-Ecological Model, the study examined the perspectives of adolescents in care and those lost to follow-up, caregivers, and healthcare providers. By identifying socio-economic, psychosocial, and health system factors influencing retention, this research aims to inform targeted and contextually appropriate interventions to enhance adolescent retention in HIV care within rural Ugandan settings.

II. METHODS

Study Design

This study employed a descriptive cross-sectional qualitative design to explore the barriers and facilitators to the retention of adolescents in HIV care. This design was selected because it allowed the researcher to gather in-depth insights into participants' experiences, perceptions, and challenges regarding retention in care within a specific time frame.

Study Setting

The research was conducted at Kabuyanda Health Center IV, a government health facility located in Isingiro District, southwestern Uganda. The facility serves a wide rural catchment area and operates as a referral center for six Health Center IIIs and nine Health Center IIs in Isingiro South health sub-district. Kabuyanda HCIV offers comprehensive ART services and has one of the highest adolescent HIV treatment current (TX_CURR) statistics in the district, with approximately 100 adolescents among the 1,408 people living with HIV receiving services. Adolescents have designated clinic days, typically on the last Thursday of every month.

Study Population

The study included adolescents aged 10–19 years who had been on HIV care for at least one year (retained in care) or had not received ART for more than 30 days after their last refill appointment (lost to follow-up). Additional participants included caregivers of adolescents, health workers (such as ART counselors, data clerks, and linkage facilitators), and YAPS.

Sampling and Sample Size

A list of eligible participants was generated in collaboration with ART staff at Kabuyanda HCIV. Simple random sampling was used to select respondents from this list to avoid selection bias and ensure equal chances of participation. Adolescents without phone contact were traced via home visits. In total, 57 participants were sampled, out of which 41 individuals were successfully enrolled, including: 12 adolescents retained in care, 10 adolescents lost to follow-up 10 caregivers, 7 YAPS, 1 counselor and 1 data clerk. Participants who did not consent, had relocated, or whose caregivers were unaware of the adolescent's HIV status were excluded.

Data Collection Procedures

Data were collected through semi-structured in-depth interviews, which allowed flexibility for probing and follow-up. An interview guide based on Health Belief Model (Becker, 1974) theoretic framework and the Socio-Ecological Model (Urie, 1980) as a conceptual framework was used to direct discussions. The guide had four parts: demographic characteristics, introductory open-ended questions, barrier/facilitator-related questions, and exit questions.

All interviews were conducted in private settings, either at the health facility or at the participants' homes, depending on convenience. Interviews lasted between 30 to 60 minutes, were conducted in the local language or English depending on preference, and were audio-recorded with participant consent. The researcher personally conducted all interviews to ensure consistency and contextual understanding. Notes were also taken during each session.

Data Management and Analysis

Audio recordings were transcribed verbatim and translated into English. Transcripts were coded and analyzed using NVivo 15, a Computer-Assisted Qualitative Data Analysis Software (CAQDAS). The six-step thematic analysis approach described by Braun and Clarke (2022) was applied. These steps included: Familiarization with data, generating initial codes, searching for themes, reviewing themes, Defining and naming themes, Producing the final report.

Codes were first applied line-by-line, then organized into categories, and finally into themes. Axial coding was used to group codes. Data were presented narratively and supported with verbatim quotes.

III. RESULTS

Socioeconomic Barriers and Facilitators to Adolescents' Retention in HIV Care

Under this objective, six major themes emerged: medication sharing, unstable housing, food insecurity, transport limitations, caregiver disengagement, and school or income support as facilitators. These themes illustrate how the reality of living in poverty shaped the everyday choices and possibilities of adolescents navigating HIV care.

One of the most unique findings was the practice of medication sharing within households. In homes where caregivers missed their own clinic appointments or lacked access to drugs, they sometimes resorted to using ART prescribed for adolescents. This was not out of malice but rather necessity yet the effect was significant. Adolescents were left with inadequate doses, even when they were willing to adhere. This shows how limited access for caregivers quietly undermined adolescent adherence, leading to poor outcomes even in cases where adolescents themselves were committed to treatment. As a youth peer supporter explained:

"Some parents miss their own appointments due to low levels of income to travel to hospital and end up swallowing adolescent's medication leaving adolescents with no ART drugs" (YAPS 3)

Another barrier involved frequent relocation and homelessness were many families were unable to maintain stable shelter and were constantly on the move. Some adolescents who were homeless had no permanent address, making follow-up and medication storage challenging. This disrupted communication with health workers and peer supporters, and in some cases, adolescents became unreachable altogether. As a result, adolescents missed follow-up visits, lost linkage to care, and quietly dropped out of the system, often unnoticed until they returned with health complications. A caregiver described the experience of losing contact with the clinic:

"We keep moving from one house to another… I have no phone, so the YAP can't find me to deliver drugs." (Caregiver 4)

An adolescent narrated that:

"I left home, isolated and started living on street and due to lack of food, and a place to keep my drugs or sleep I decided to throw the drugs I had, stop drug and couldn't go for fill ups" (Adol.19, Male, 18 years)

Also situation of food insecurity was one of the most commonly cited challenges were adolescents reported skipping medication when they had not eaten, fearing dizziness, fatigue, or other side effects. The act of taking ART became tied to the availability of food, turning adherence into a conditional behavior based on household circumstances. Even when drugs were in their hands, hunger made adherence impossible, especially in households already struggling to meet basic needs. One adolescent described the dilemma plainly:

"We eat once a day… we skip medication if there's no food." (Adol.11, Male, 15 years)

Transport limitations also featured prominently in adolescents' narratives. Many lived far from the clinic, and the cost of travel was unaffordable. Some relied on caregivers for transport support, while others waited in vain for community health workers who might not arrive. Here, distance combined with poverty to create an invisible wall between the adolescent and the clinic, turning refill dates into missed opportunities. An adolescent shared:

"My mother doesn't give me transport… she says the community worker will bring my drugs." (Adol.12, Female, 12 years)

The role of caregivers emerged as both a barrier and a potential facilitator. Adolescents whose caregivers were disengaged emotionally or practically faced more missed appointments, less encouragement, and weaker motivation to remain in care. Some caregivers simply forgot appointments, while others showed outright rejection or neglect. These accounts reveal how vital caregivers were in the medication journey either as anchors or as agents of abandonment. One adolescent recounted:

"My mother keeps my medical book. If she doesn't remind me, I miss my refill." (Adol.12, Female, 12 years)

Another recalled a much harsher reality:

"My father said, 'Let him die of HIV.' I left home and lived on the street." (Adol.19, Male, 18 years)

On the positive side, several facilitators helped adolescents remain engaged in care, even amid poverty. Some adolescents found stability and support through schools, where matrons or teachers provided reminders and emotional safety. Others relied on small jobs like farming, or market vending to buy food or pay for transport. These adolescents showed that where structure, reminders, or resources existed, retention was possible even in the context of daily hardship. Supportive school environments and access to even modest income made the difference between staying in care and silently falling away

One adolescent shared the encouragement he received at school:

"The school matron knows I take ARVs… she reminds me every day." (Adol.22, Female, 18 years)

Another reflected on how income independence helped him:

"I do small jobs to buy food and take my drugs well." (Adol.2, Male, 15 years)

Health System Factors Influencing Retention of Adolescents in HIV Care

Five major themes emerged under this objective: fear of status disclosure from mobile clinics**,** stock-outs of essential medicines**,** school schedule conflicts**,** health literacy gaps**, and** health system strengths such as ART availability and counseling support. These findings reveal how the structure, delivery, and responsiveness of the health system could either enable or obstruct adolescents' ability to stay in care.

One of the more unexpected barriers arose from a service designed to improve access: mobile clinics. While intended to bring medication closer to those in remote or hard-to-reach areas, some adolescents viewed home delivery with suspicion and fear. In homes where HIV status had not been disclosed to caregivers or family, receiving ART at home was seen as a threat rather than a support. The mere presence of a health worker could raise questions the adolescent wasn't ready to answer. Here, well-meaning outreach clashed with adolescents' need for privacy and control over disclosure**.** So instead of improving access, mobile services were sometimes rejected leaving adolescents at even greater risk of missing treatment.

"Some adolescents refuse mobile clinic visits because they fear others will find out," explained one youth peer supporter. (YAPS 3)

Another systemic challenge came in the form of stock-outs of essential medications, particularly Septrin. Although ART was generally available, these supplementary drugs were often unavailable at the clinic. Adolescents who could not afford to purchase them privately were left without protection against opportunistic infections. In this way, gaps in supply broke the completeness of care. So even adolescents who remained engaged in services could suffer from unaddressed health needs, simply because the system failed to provide all the medications they required.

"Septrin was out of stock. I was told to buy it, but my mother had no money," recalled one adolescent. (Adol.1, Male, 13 years)

School responsibilities also interfered with treatment schedules were adolescents described missing appointments when refill dates fell during examination periods or busy school terms. Some avoided asking caregivers to collect their medication out of fear that their HIV status might be revealed or misunderstood. For these adolescents, education and health were placed in silent competition. Without flexible refill systems, they often chose school over clinic so treatment was missed not out of unwillingness, but due to a scheduling mismatch the system didn't account for.

"During exams, I miss my refill… I wait until they're over because I don't want my family to go" (Adol.18, Female, 16 years)

Despite these challenges, the health system was not without its strengths. Several adolescents described positive experiences with ART availability and counseling services. They appreciated that medications were consistently in stock, waiting times were short, and the staff provided encouragement and psychological support. These factors played a powerful role in building confidence and promoting retention. Where care was consistent, timely, and emotionally affirming, adolescents kept returning. So system reliability and compassion worked hand-in-hand to protect retention in ways that went beyond just handing out pills. An adolescent narrated:

"I've never bought any drug here… medication is always available at hospital" (Adol.20, Male, 18 years)

Another added: *"The counselor said my status doesn't define me. That keeps me strong."* (Adol.4, Female, 15 years)

Psychosocial Barriers and Facilitators to Adolescents' Retention in HIV Care

Under this objective, six key themes emerged: accidental disclosure**,** self-stigma**,** fear of being seen**,** delayed disclosure**,** and two important facilitators peer role models and early, supportive disclosure. These findings highlight the deep emotional and psychological layers that shaped adolescents' ability to stay in care. For many, emotional safety was just as critical as physical access to services. How adolescents were treated, talked to, and supported had lasting effects on their relationship with HIV care.

One of the most emotionally devastating findings was accidental or forced disclosure. Some adolescents learned about their HIV status not from a trusted adult, but publicly during school sessions or from health workers who did not follow ethical disclosure practices. In these moments, the power to control one's own narrative was taken away, leaving behind anger, confusion, and emotional withdrawal. Due to this, trust was not just broken it was shattered. Adolescents like him disengaged not because they didn't care, but because their confidence in the system had collapsed. So disclosure, when done poorly, didn't just damage relationships it pushed adolescents out of care entirely.

"The health worker disclosed my status during an awareness session. I felt betrayed and stopped taking the drug," shared a 15 years old adolescent.

Self-stigma and the fear of being seen were also major barriers. For many adolescents, the thought of someone discovering their medication or overhearing a conversation about HIV sparked intense anxiety. This fear drove secrecy, missed doses, and delayed clinic visits. Even at home, privacy was fragile. In such cases, HIV care wasn't just about swallowing pills it was about hiding them. And when stigma overpowered routine, even committed adolescents faltered. So stigma wasn't just external it became a voice inside their own heads, telling them to stop. An adolescent shared:

"Only my grandmother knows… I miss doses because I fear being seen by other family members" (Adol.1, Male, 13 years)

For some, disclosure came too late, and when it finally arrived, it was stressing. Adolescents who learned their status in their teens, without prior explanation or gradual preparation, described the experience as traumatic. Rather than empowering them to take ownership of their health, late disclosure introduced fear and emotional shutdown. These adolescents weren't given time to process, grieve, or understand. So instead of building resilience, disclosure created a crisis. In the absence of psychological support, some simply gave up. One adolescent admitted:

"I was disclosed to at an old age… I left school and stopped taking my drugs" (Adol.20, 18 years, Male)

But even with the barriers, there were facilitators such as emotional support that helped adolescents thrive**.** Several participants described how peer role models especially HIV-positive clinicians or youth peers served as living proof that health and happiness were still possible. These role models helped dissolve shame and offered a powerful sense of belonging. That sense of "they get me" changed everything. When adolescents could see themselves reflected in someone else's survival story, HIV became something they could live with not run from. So peer support wasn't just a comfort it was a compass pointing them back to care. An adolescent narrated that:

"The clinicians told me they're HIV positive. I feel safe they understand me and this helped me to stay in care" (Adol.4, 15 years, Female).

Another key facilitator was early, well-supported disclosure**.** Adolescents who were told their status at a younger age, and in a loving, step-by-step way, described a much smoother journey. These adolescents had time to understand their condition, ask questions, and normalize medication in their daily lives. In these cases, knowledge became empowerment not punishment. With consistent support and honesty, adolescents accepted their status as part of who they were, so they grew into treatment, rather than resisting it.

"My mother disclosed to me at 9 years. I've grown up knowing I must take drugs" (Adol.2, 15 years, Male)

The barriers and facilitators identified were used to assess factors influencing adolescent retention in HIV care. Though each theme provided insight, most challenges overlapped and these interwoven barriers require a coordinated, holistic approach that addresses socio-economic, structural and psychosocial needs. However, knowledge of these issues especially where they intersect was generally lacking among adolescents, caregivers, and providers. This matters because retention is central to HIV care, as it directly supports adherence and long-term treatment outcomes.

IV. DISCUSSION

Socio-Economic Factors Influencing Retention in HIV Care

This study found that poverty-related challenges particularly transport costs, food insecurity, and inability to purchase medications during stock-outs were among the most significant barriers to adolescent retention in HIV care at Kabuyanda HCIV. Adolescents and caregivers consistently highlighted these socio-economic constraints as determinants of whether adolescents could attend appointments or maintain ART adherence. These findings align with those of Kwena et al. (2023) who identified poverty as a major deterrent to engagement in adolescent HIV care, and with earlier work by O'Laughlin et al., (2021) which applied the Socio-Ecological Model to examine how structural poverty limits healthcare access. This study adds to that literature by showing how these dynamics specifically manifest among adolescents, reinforcing the SEM perspective that in HIV care, retention cannot be understood in isolation from broader household and economic realities.

A particularly noteworthy and underreported finding in this study was the practice of medication sharing among family members, including adolescents. While this has been previously documented in adult HIV populations (Ssekasanvu et al., 2023), its occurrence among adolescents has received limited attention. The finding challenges the individual-focused assumptions of adherence models such as the Health Belief Model (HBM) and highlights how adherence in this context is shaped by household-level coping strategies. For families facing severe economic constraints, medication sharing may serve as a survival strategy, allowing at least one member to continue treatment even if others temporarily go without. While this compromises recommended care protocols, it reflects a rational response to structural deprivation. This behavior also echoes findings by Mtisi et al. (2023), who linked household poverty to treatment interruption. Our study extends this body of work by revealing medication sharing among adolescents, thereby broadening the age focus of previous research and emphasizing the need to assess treatment adherence through a collective, rather than purely individual lens.

On the other hand, this study identified protective factors that supported adolescent retention, particularly engagement in small-scale livelihood activities such as fetching water, poultry rearing, and farming. These roles helped adolescents secure resources like food and transport fares, improving clinic attendance and adherence. This is consistent with research by Ssewamala et al. (2022) and Muwanguzi et al. (2021), who demonstrated that economic empowerment strengthens long-term engagement in HIV care. These findings directly address the study aim by identifying both barriers and facilitators to adolescent retention in care. HIV programs should integrate social protection, transport stipends, and livelihood training to sustainably improve adolescent care outcomes. Future research should further investigate the prevalence and health impact of medication sharing among adolescents and evaluate how economic interventions shape long-term retention across diverse settings.

Health System Factors Influencing Retention in HIV Care

In this study, health system-level barriers such as long distances to clinics, school schedule conflicts, and stock-outs of supplementary drugs particularly septrin significantly affected adolescent retention in HIV care at Kabuyanda HCIV. These findings directly respond to the study's first aim by revealing how systemic gaps compromise adolescents' ability to stay engaged in care. The repeated unavailability of septrin eroded adolescents' and caregivers' trust in the health system, as they perceived it as unreliable, even when ART was consistently available. This gap in essential prophylaxis created fear and confusion about whether they were receiving complete treatment. This finding echoes Zhang et al. (2021) and Jacobs et al., (2024), who showed that interruptions in prophylactic therapy, such as cotrimoxazole, discourage long-term engagement in HIV care. Study results also align with Nimwesiga et al. (2023), who found that mobile clinics improved access for adolescents in rural areas.

Similarly, Onyango et al. (2021) reported that conflicts between school timetables and clinic visits were a widespread barrier to adolescent care engagement in Kenya. These comparisons show that our findings resonate with prior studies across Sub-Saharan Africa, highlighting systemic health service challenges. Moreover, our findings challenge the Health Belief Model (HBM)'s assumption that knowledge alone drives action. Even adolescents who understood the importance of ART still missed visits due to institutional barriers such as stock-outs and inaccessible clinic times. The implications for practice include strengthening septrin supply chains, aligning school and clinic schedules, and scaling up adolescent-friendly service delivery models.

Psychosocial Factors Influencing Retention in HIV Care

In this study, psychosocial barriers such as self stigma, fear of disclosure, emotional trauma, and poor caregiver support were critical obstacles to adolescent retention in HIV care. These findings directly addressed the study aim by revealing how psychosocial dynamics undermine continuity in care.

Internalized and anticipated stigma were particularly impactful adolescents feared being judged and lacked emotional safety, especially during adolescence, a period already fraught with identity struggles. Similar to findings by Perger et al. (2025) and Muwanguzi et al. (2021), stigma disrupted disclosure and clinic attendance.

However, this study added a unique dimension by showing how delayed and unstructured disclosure caused confusion and emotional withdrawal, often leading to disengagement. Our study emphasized the caregiver's role in shaping disclosure outcomes, a layer explored more deeply through the SEM. The Health Belief Model (HBM) helped frame how fear of rejection creates perceived barriers, while the Social Ecological Model (SEM) explained stigma’s reinforcement through caregivers, communities, and health systems.

The role of peer modelling through Young Adults with Positive status (YAPs) was a positive finding in this study. These peers served not just as information sources but as emotional anchors and role models. Adolescents found safety, identity, and motivation in these relationships needs often unmet by standard providers. This builds on the work of Chemisto, (2022), but our study brings out how YAPs create emotionally secure micro-environments within clinics. Adolescents preferred peers who "understood their world," pointing to a critical emotional intelligence gap among general clinic staff. In line with Katongole et al. (2024) and Embleton et al. (2025), youth-friendly counseling and timely disclosure also emerged as a key facilitator, functioning as a "cue to action" in HBM terms.

V. LIMITATION

This study faced limitations that affected the generalizability of its findings. Although 57 participants were initially targeted, only 41 were included due to difficulties in tracing some lost-to-follow-up adolescents and issues related to consent or unknown HIV status. To address this, the study relied on rich, in-depth qualitative data from those successfully recruited, ensuring diverse perspectives across adolescents, caregivers, and health workers were captured. This approach allowed for a meaningful exploration of barriers and facilitators to retention, even within a smaller sample.

VI. CONCLUSIONS

Retention in HIV care is essential to achieving viral suppression, reducing HIV transmission, and improving adolescent health outcomes. This underscores why all barriers to continuity in care must be systematically addressed through adolescent-centered strategies. Medication sharing, food insecurity, stigma, and school-clinic conflicts emerged as core challenges to consistent ART adherence. These findings show how structural and psychosocial constraints interact to disrupt adolescent care engagement. Investing in peer-led support, school-health service integration, and economic support systems can significantly improve retention. Such strategies can reduce stigma, improve access, and provide safety nets for the most vulnerable adolescents.

Future research should explore how non-disclosure adolescents especially in boarding schools navigate treatment under academic pressure. Understanding these hidden dynamics can inform policies that safeguard privacy while enhancing adolescent care outcomes.

VII. ETHICAL APPROVAL AND CONSENT

Approval to conduct the study was obtained from the University Research Ethics Committee at Bishop Stuart University (**BSU-REC-2024-361**). Further administrative clearance was secured from Kabuyanda Health Center IV and Isingiro District Health Office to allow us conduct the study from their area of authority. All participants gave written informed consent before taking part in the study. For adolescents under the age of 18, assent was obtained in addition to consent from their caregivers, provided the caregiver was aware of the adolescent's HIV status.

VIII. ACKNOWLEDGMENT

We acknowledge all participants who shared their time, insights, and experiences during this study. We extend our sincere gratitude to the Faculty of Health Sciences at Bishop Stuart University for their academic guidance and support throughout the research process. Special appreciation goes to the Isingiro District Health Office and Kabuyanda Health Center IV for granting permission and creating an enabling environment. Your contributions were vital to the successful completion of this study.

REFERENCES

[1] Tukei V.J., Machekano R., Tchounga B.K., Khumalo P.N., Tumwebaze R., Murandu M., Viana S.M., Masaba R.O., Mokone-Mwape M., Chirwa L., Mashizwa S., Rakhmanina N., Tiam A., "Follow-Up Outcomes of Children, Adolescents, and Young People on Darunavir-Based Third-Line Antiretroviral Therapy: Observational Cohort from 9 African Countries", JAIDS Journal of Acquired Immune Deficiency Syndromes, November 1, 2024, 97 (3), 308–312. https://doi.org/10.1097/QAI.0000000000003498

[2] World Health Organization, "HIV Statistics, Globally and by WHO Region, 2023", World Health Organization, 2023. https://cdn.who.int/media/docs/default-source/hq-hiv-hepatitis-and-stis-library/j0294-who-hiv-epi-factsheet-v7.pdf

[3] World Health Organization, "Adolescent and Young Adult Health", World Health Organization, November 26, 2024. https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions

[4] UNAIDS, "HIV and Adolescent Girls and Young Women – Thematic Briefing Note (Global AIDS Update 2024)", UNAIDS, July 22, 2024. https://www.unaids.org/en/resources/documents/2024/2024-unaids-global-aids-update-adolescent-girls-young-women

[5] UNICEF, "HIV and AIDS: Adolescents and Young People", UNICEF, 2025. https://data.unicef.org/topic/hivaids/adolescents-young-people

[6] Nimwesiga C., Taremwa I.M., Nakanjako D., Nasuuna E., "Factors Associated With Retention in HIV Care Among HIV-Positive Adolescents in Public Antiretroviral Therapy Clinics in Ibanda District, Rural South Western Uganda", HIV AIDS (Auckland), March 4, 2023, 15, 71–81. https://doi.org/10.2147/HIV.S401611

[7] Leshargie C.T., Demant D., Burrowes S., Frawley J., "The Proportion of Loss to Follow-Up from Antiretroviral Therapy (ART) and Its Association With Age Among Adolescents Living With HIV in Sub-Saharan Africa: A Systematic Review and Meta-Analysis", PLOS ONE, August 2022, 17 (8), e0272906, 1–17. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0272906

[8] Mtisi E.L., Mushy S.E., Mkawe S.G., et al., "Risk Factors for Interruption in Treatment Among HIV-Infected Adolescents Attending Health Care and Treatment Clinics in Tanzania", AIDS Research and Therapy, 2023, 20, 19, 6–9. https://doi.org/10.1186/s12981-023-00512-4

[9] World Health Organization, "The Final Stretch to Reaching 95–95–95 Targets: Supporting Re-Engagement in HIV Treatment", WHO Departmental Update, July 22, 2024. https://www.who.int/news/item/22-07-2024-the-final-stretch-to-reaching-95-95-95-targets--supporting-re-engagement-in-hiv-treatment

[10] Kwena Z.A., Amico R.K., Masvawure T.B., Ngure K.K., Bukusi E.A., Remien R.H., Mantell J.E., "Barriers to Linkage and Retention in HIV Care Still Persist Among Adolescent Girls and Young Women in Western Kenya", African Journal of AIDS Research, 2023, 22 (2), 71–84. https://doi.org/10.2989/16085906.2023.2197879

[11] Uwamariya J., Nshunguyabahizi M., Nshimyumuremyi J.N., Mukesharurema G., Ndayishimiye E., Kamali I., Ndahimana J.D., Hedt-Gauthier B., Cubaka V.K., Barnhart D.A., "Rediscovering Life After Being Diagnosed With HIV: A Qualitative Analysis of Lived Experiences of Youth Living With HIV in Rural Rwanda", Frontiers in Reproductive Health, November 4, 2022, 4, 993916, 5–12. https://doi.org/10.3389/frph.2022.993916

[12] Muwanguzi M., Lugobe H.M., Ssemwanga E., et al., "Retention in HIV Care and Associated Factors Among Youths Aged 15–24 Years in Rural Southwestern Uganda", BMC Public Health, 2021, 21, 1489. https://doi.org/10.1186/s12889-021-11547-5

[13] Twekambe E., Epuitai J., Kawala E.K., Namanya V., Ayikobua E.T., Obakiro S.B., Napyo A., Kiyimba K., "A Qualitative Exploration of the Psychosocial Factors Affecting Antiretroviral Therapy Adherence Among HIV Infected Young Adults in Eastern Uganda", medRxiv, 2023.02.04.23285423, 7–23. https://doi.org/10.1101/2023.02.04.23285423

[14] Adams C., Kiruki M., Karuga R., et al., "Your Status Cannot Hinder You: The Importance of Resilience Among Adolescents Engaged in HIV Care in Kenya", BMC Public Health, 2022, 22, 1272, 4–13. https://doi.org/10.1186/s12889-022-13677-w

[15] Maskew M., Technau K., Davies M.A., Vreeman R., Fox M.P., "Adolescent Retention in HIV Care Within Differentiated Service-Delivery Models in Sub-Saharan Africa", The Lancet HIV, October 2022, 9 (10), e726–e734. https://doi.org/10.1016/S2352-3018(22)00137-0

[16] O'Laughlin K.N., Greenwald K., Rahman S.K., et al., "A Social-Ecological Framework to Understand Barriers to HIV Clinic Attendance in Nakivale Refugee Settlement in Uganda: A Qualitative Study", AIDS and Behavior, 2021, 25, 1729–1736. https://doi.org/10.1007/s10461-020-03102-x

[17] Enane L.A., Apondi E., Toromo J., Bosma C., Ngeresa A., Nyandiko W., Vreeman R.C., "A Problem Shared Is Half Solved – A Qualitative Assessment of Barriers and Facilitators to Adolescent Retention in HIV Care in Western Kenya", AIDS Care, 2019, 32 (1), 104–112. https://doi.org/10.1080/09540121.2019.1668530

[18] Ssekasanvu J., et al., "ART Sharing Is Common and Associated With Viremia: A Population-Based Study in Uganda", Conference

on Retroviruses and Opportunistic Infections, Seattle, Abstract 206, 2023. https://www.aidsmap.com/news/feb-2023/sharing-anti-hiv-medication-common-rural-uganda

[19] Kizito S., Ssewamala F.M., Nabayinda J., Namuwonge F., Neilands T.B., Nabunya P., Bahar O.S., Ssentumbwe V., Nattabi J., "The Long-Term Impact of Family Economic Empowerment on Viral Suppression and Mental Health Outcomes Among Adolescents Living With HIV in Low-Income Settings: A Cluster-Randomized Controlled Trial in Southern Uganda", Social Science and Medicine, January 2025, 364, 117546. https://doi.org/10.1016/j.socscimed.2024.117546

[20] Jin Hui Z., Yu Hua R., Stephen P., Wen Min Y., Qiu Ying Z., Huan Huan C., Zhi Yong S., Guang Hua L., Hui X., Yi Ming S., Li Ming L., "Effects of Cotrimoxazole Prophylaxis Initiation and Discontinuation on Mortality and Attrition Rates Among HIV Patients Who Initiate ART in Southwest China: An Observational Cohort Study", Biomedical and Environmental Sciences, 2021, 34 (8), 646–649. https://doi.org/10.3967/bes2021.090

[21] Jacobs T.G., Okemo D., Ssebagereka A., et al., "Availability and Stock-Outs of Paediatric Antiretroviral Treatment Formulations at Health Facilities in Kenya and Uganda", HIV Medicine, 2024, 25 (7), 805–816. https://doi.org/10.1111/hiv.13635

[22] Palk L., Okano J.T., Dullie L., Blower S., "Travel Time to Health-Care Facilities, Mode of Transportation, and HIV Elimination in Malawi: A Geospatial Modelling Analysis", The Lancet Global Health, 2020, 8 (12), e1560–e1562. https://doi.org/10.1016/S2214-109X(20)30351-X

[23] Onyango M., Chergui H., Sabin L., Messersmith L., Sarkisova N., Oyombra J., Akello P., Kwaro D., Otieno J., "School-Level Barriers of Antiretroviral Therapy Adherence and Interventions to Overcome Them Among Adolescents Living With HIV in Western Kenya: A Qualitative Study", Open AIDS Journal, 2021, 15, 96–104. http://dx.doi.org/10.2174/1874613602115010093

[24] Perger T., Davtyan M., Foster C., et al., "Impact of HIV-Related Stigma on Antiretroviral Therapy Adherence, Engagement and Retention in HIV Care, and Transition to Adult HIV Care in Pediatric and Young Adult Populations Living With HIV: A Literature Review", AIDS and Behavior, 2025, 29, 497–511. https://doi.org/10.1007/s10461-024-04534-5

[25] Chemisto M., "Peer to Peer Support Brings Positive Outcomes Among Adolescents in Northern Uganda: Initiative Boosts the Confidence of Adolescents Living With HIV and Drug Adherence", UNICEF Uganda, January 25, 2022. https://www.unicef.org/uganda/stories/peer-peer-support-brings-positive-outcomes-among-adolescents-northern-uganda

[26] Embleton L., Sudjaritruk T., Machado D.M., Chihota B., Musabyimana F., Jesson J., Apondi E., Puthanakit T., Luque M.T., van Dongen N.E., Murenzi G., Amorissani-Folquet M., Kwena Z., Perreras N., Rouzier V., Lyamuya R., Anderson K., Elul B., Leroy V., Enane L.A., Martin R., Lancaster K., Parcesepe A.M., Vreeman R., "Characterizing Adolescent and Youth-Friendly HIV Services: A Cross-Sectional Assessment Across 16 Global Sites", Journal of the International AIDS Society, April 2025, 28 (4), e26437, 1–9. https://doi.org/10.1002/jia2.26437

[27] Katongole S.P., Mukama S.C., Nakawesi J., et al., "Enhancing HIV Treatment and Support: A Qualitative Inquiry Into Client and Healthcare Provider Perspectives on Differential Service Delivery Models in Uganda", AIDS Research and Therapy, 2024, 21, 47, 4–15. https://doi.org/10.1186/s12981-024-00637-0