



Utilization of HIV Care Services among Adolescents in the Comprehensive Care Center in Kenya

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Abstract: Human immunodeficiency virus (HIV) remains a major public health concern among adolescents in sub-Saharan Africa, where unique social and structural barriers hinder effective engagement in care. This study examined factors influencing the utilization of HIV care services among adolescents attending the Comprehensive Care Center (CCC) at Ahero Sub-County Referral Hospital, Kenya. Specifically, it analyzed socio-demographic and economic determinants, assessed knowledge and awareness of HIV services, and proposed strategies to enhance uptake. A mixed-methods design was employed, with the quantitative component consisting of surveys administered to 264 adolescents aged 10–19 years, whose sample size was determined using the Fisher et al. (1998) formula. In addition, a smaller subset of participants and key informants participated in qualitative interviews to complement and contextualize the quantitative findings. Data were analyzed using Microsoft Excel and SPSS. Results showed that 58% of participants were female, with a mean age of 15 years. Most (86%) obtained HIV-related information from hospitals, while only 10% relied on family members. Despite service availability, low awareness, stigma, and long distances to care facilities contributed to underutilization. The study underscores the need for adolescent-centered interventions, including tailored health education, stigma reduction, and expansion of community-based HIV care models. Enhanced media engagement and family involvement are also recommended to improve awareness and service uptake. Addressing these barriers is critical to improving adolescent health outcomes and achieving the global target of ending AIDS by 2030.

Keywords: HIV care services, Adolescents, Utilization, Barriers, Comprehensive care and Kenya

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1. Introduction

More than four decades after the discovery of HIV, the epidemic remains one of the most persistent global public health challenges. As of 2023, an estimated 39 million people were living with HIV, of whom adolescents aged 10–19 years represent a particularly vulnerable group (UNAIDS, 2023). Despite remarkable progress in expanding antiretroviral therapy (ART) and prevention strategies, adolescent engagement in HIV care remains suboptimal worldwide (UNICEF, 2023). Stigma, discrimination, and limited access to adolescent-friendly services continue to impede treatment adherence and retention in care (Idele et al., 2022). The World

Health Organization (WHO, 2023) underscores that achieving the Sustainable Development Goal (SDG) target of ending AIDS by 2030 will depend on effectively addressing the unique psychosocial and structural barriers adolescents face in the HIV care continuum.

Sub-Saharan Africa remains the epicenter of the epidemic, accounting for nearly 65% of all new infections in 2023 (UNAIDS, 2023). Adolescents in this region face compounded challenges, including poverty, gender inequalities, cultural taboos surrounding sexuality, and weak healthcare systems (Mabaso et al., 2023). Although regional initiatives such as PEPFAR and the African Union’s Agenda 2063 have strengthened

HIV programs, inequities in adolescent access and retention persist (Ezeh et al., 2022). Adolescent girls are particularly at risk due to early sexual debut, gender-based violence, and limited decision-making autonomy in seeking care (WHO, 2023).

In Kenya, HIV remains a critical public health concern, with adolescents accounting for a disproportionate share of new infections. The Kenya Population-Based HIV Impact Assessment (KENPHIA, 2020) estimated an adolescent HIV prevalence of 4.5%, with Kisumu County recording one of the highest rates nationally at 15.1%. The government has responded through the establishment of Comprehensive Care Centers (CCCs), which provide integrated HIV services (NASCOP, 2022). However, despite these interventions, adolescent utilization of HIV care remains low due to stigma, socio-economic barriers, and limited awareness (Ngure et al., 2023). Understanding the factors influencing adolescent engagement with CCC services in high-prevalence settings like Ahero Sub-County Referral Hospital is therefore vital to informing context-specific, youth-centered interventions.

1.1 Statement of Problem

Despite significant progress in expanding HIV prevention and treatment services, adolescents continue to experience disproportionately poor outcomes along the HIV care continuum. Globally, adolescents aged 10–19 years exhibit lower rates of testing, linkage to care, and viral suppression compared to adults (UNAIDS, 2023; WHO, 2023). In sub-Saharan Africa, this gap is particularly pronounced due to persistent structural and social barriers, including stigma, poverty, and gender inequality (Mabaso et al., 2023). The intersection of these factors undermines sustained engagement in care and compromises the effectiveness of national HIV programs targeting youth.

In Kenya, adolescents face compounded challenges in accessing and utilizing HIV care services despite the establishment of Comprehensive Care Centers (CCCs) and youth-friendly initiatives (NASCOP, 2022). Studies indicate that socio-economic constraints, inadequate awareness, and healthcare provider bias limit adolescent participation in ongoing care (Ngure et al., 2023). In high-prevalence regions such as Kisumu County, these barriers contribute to suboptimal ART adherence, high viral load rates, and increased HIV transmission risk (KENPHIA, 2020). However, empirical data on the determinants of HIV care utilization among adolescents in these settings remain limited. Understanding these contextual factors is critical for developing targeted, adolescent-centered strategies to improve engagement and treatment outcomes in Kenya's CCCs.

2. Literature Review

This section presents key findings on the factors influencing HIV care utilization among adolescents attending Comprehensive Care Centers (CCCs) in Ahero, Kisumu County. Adolescents living with HIV face intertwined socio-demographic, economic, and psychosocial barriers that hinder engagement in care. Poverty, gender inequality, stigma, and limited access to education and youth-friendly services emerged as dominant challenges, particularly among adolescent girls. While awareness of HIV care services has improved, misconceptions and fragmented information continue to affect adherence and retention. Peer networks and family support systems were found to enhance resilience and treatment consistency, though systemic barriers persist. Innovative interventions, such as differentiated service delivery models, digital adherence tools, and peer-led programs, show potential but require sustainable policy integration and contextual adaptation. Overall, the findings highlight that improving adolescent HIV care demands holistic, gender-sensitive, and community-driven strategies that address structural inequities alongside clinical needs.

2.1 Theoretical Framework

This study is grounded in the Health Belief Model (HBM) and the Socio-Ecological Model (SEM), both of which provide complementary perspectives for understanding adolescent HIV care utilization.

The Health Belief Model, developed by Rosenstock (1974) and later refined by Becker (1984), posits that individual health behavior is influenced by perceived susceptibility to illness, perceived severity of the condition, perceived benefits of taking action, and perceived barriers to action. In this context, adolescents' decisions to utilize Comprehensive Care Center (CCC) services are shaped by their understanding of HIV risks, the benefits of adhering to antiretroviral therapy (ART), and the obstacles they perceive—such as stigma, fear of disclosure, or lack of confidentiality. Cues to action, such as peer support or health education campaigns, play a vital role in motivating service uptake. Thus, HBM helps explain the psychosocial and perceptual dimensions that affect adolescents' engagement with HIV care services.

The Socio-Ecological Model, initially articulated by Bronfenbrenner (1979), extends this understanding by situating individual behavior within multiple, interacting levels of influence—individual, interpersonal, community, institutional, and societal. It emphasizes that adolescent health-seeking behavior is not shaped solely by personal beliefs, but also by family support, peer relationships, school environments, community stigma, and the broader health system structure. Within the Kenyan context, factors such as gender norms, poverty,

and service accessibility interact to either facilitate or hinder adolescent engagement in HIV care.

Together, these frameworks provide a comprehensive lens for this study. While the HBM captures individual-level perceptions and motivations, the SEM highlights structural and contextual barriers. Integrating both models enables a multidimensional analysis of how social, economic, and institutional factors intersect to influence adolescents' utilization of HIV care services, thereby guiding evidence-based interventions to improve CCC engagement outcomes.

2.2 Empirical Review

Adolescents living with HIV represent one of the most vulnerable yet overlooked populations in global health, particularly in sub-Saharan Africa, where structural, social, and economic inequalities continue to shape their access to care. Understanding the determinants of HIV care utilization among this age group requires a multidimensional analysis that integrates demographic, psychosocial, and systemic factors. This section examines the interplay between socio-demographic and economic characteristics, knowledge and awareness of HIV care services, and intervention strategies influencing adolescents' engagement with Comprehensive Care Centers (CCCs) in Kenya.

Adolescents' ability to adhere to HIV treatment and remain in care is not merely a matter of individual motivation; it is shaped by broader contextual realities such as poverty, gender norms, stigma, and inequitable access to information. Previous studies have shown that adolescent girls and young women bear a disproportionate burden of infection, often linked to social vulnerabilities and limited autonomy in decision-making (Mabaso et al., 2023; NASCOP, 2022). Similarly, educational and economic disparities contribute to poor service uptake and adherence.

By exploring these interrelated themes, this section provides a nuanced understanding of the barriers and enablers of HIV care utilization among adolescents. It also highlights emerging strategies, ranging from peer-led support networks to digital innovations, that offer potential for sustainable and equitable adolescent HIV care models.

2.2.1 Socio-Demographic and Economic Characteristics of Adolescents Receiving HIV Care Services

Globally, adolescents living with HIV represent a socially and economically diverse population whose demographic and structural contexts significantly influence care utilization. According to UNAIDS (2023), poverty, gender inequity, and limited access to education are among the most critical determinants of adolescent

vulnerability to HIV infection and engagement in care. Studies from low- and middle-income countries (LMICs) such as South Africa and Uganda show that adolescent girls disproportionately shoulder the HIV burden due to early sexual debut, transactional relationships, and exposure to gender-based violence (Mabaso et al., 2023; Nabukeera et al., 2022). This aligns with Kenya's experience, where adolescent girls account for nearly two-thirds of new HIV infections among young people (NASCOP, 2022).

Economic deprivation exacerbates poor adherence to care, with adolescents often missing appointments due to inability to afford transportation or clinic fees (Kisaka et al., 2023). Similar trends have been reported in Nigeria and Tanzania, where financial stress and food insecurity were associated with lower ART adherence and viral suppression (Olowookere et al., 2022; Mushi et al., 2021). McCarthy et al. (2018) found that even schooling, which is expected to offer stability, introduces challenges — students in boarding schools often lack privacy to take medication discreetly, leading to missed doses. These findings highlight how social institutions, schools, families, and communities can unintentionally perpetuate barriers to care.

However, some studies demonstrate resilience within adolescent populations. For example, peer networks and family support systems in Botswana and Rwanda have been linked to improved adherence and psychosocial well-being (Tukei et al., 2023). This suggests that targeted family-based and community interventions can mitigate the effects of poverty and stigma when properly integrated into adolescent care models. Still, the literature reveals a consistent gap in addressing the intersection of socio-economic vulnerability, gender, and health service accessibility in rural African contexts like Western Kenya.

2.2.2 Knowledge and Awareness of HIV Care Services among Adolescents Attending CCCs

Knowledge and awareness of HIV care services are pivotal determinants of treatment engagement. In sub-Saharan Africa, misconceptions about HIV transmission persist, with many adolescents unaware of how ART works or the importance of adherence (UNICEF, 2023). A study in Malawi by Mpondo et al. (2023) found that adolescents with limited HIV literacy had lower ART adherence and were less likely to attend routine clinic appointments. Similarly, in Kenya, the Kenya Demographic and Health Survey (KDHS, 2022) revealed that only 59% of adolescents possess comprehensive knowledge of HIV transmission and prevention.

Misconceptions, such as the belief that HIV can spread through casual contact or mosquito bites, remain common in rural Kenya (Onyango et al., 2022). These erroneous beliefs reinforce stigma, discouraging

adolescents from disclosing their status or seeking services. In contrast, countries like Namibia and Lesotho have seen improved adolescent engagement following the integration of comprehensive sexuality education (CSE) in schools (UNESCO, 2022). This evidence underscores the link between structured information dissemination and effective HIV care utilization.

Nevertheless, studies also critique the inadequacy of current educational programs. In Kenya, HIV education remains fragmented, often moralistic rather than informative, and fails to engage younger adolescents (ages 10–14) who are entering sexual maturity (Mutisya & Njeri, 2023). Moreover, access to digital information sources remains uneven; while urban youth may benefit from social media-based HIV campaigns, rural adolescents remain excluded due to digital divides (KNCHR, 2023). Hence, while awareness campaigns are improving, structural inequities in information access persist, necessitating inclusive, multi-platform education strategies that bridge the rural-urban gap.

2.2.3 Interventions and Viable Strategies to Enhance the Use of HIV Care Services at CCCs

Effective HIV care utilization among adolescents requires multi-level interventions that address personal, systemic, and technological barriers. The World Health Organization (WHO, 2023) recommends differentiated service delivery (DSD) models, such as youth-friendly clinic hours and community ART groups, to enhance accessibility and retention. Countries like Uganda and Zambia have successfully implemented adolescent peer clubs within Comprehensive Care Centers (CCCs), significantly improving ART adherence and reducing stigma (Namisi et al., 2022).

In Kenya, the Ministry of Health has expanded CCCs to integrate psychosocial support, reproductive health services, and counseling. However, studies reveal mixed outcomes. Njeru et al. (2023) found that although CCCs improved ART uptake, adolescents still encountered negative provider attitudes and confidentiality breaches, which undermined trust. Comparatively, in South Africa, youth-adapted “Teen Clubs” have shown higher retention and viral suppression rates due to peer mentorship and consistent psychosocial engagement (Cluver et al., 2022).

Digital innovations also offer promising results. Mobile health (mHealth) technologies such as SMS reminders, adherence tracking, and tele-counseling have been shown to increase adherence rates by 15–25% among adolescents in Kenya, Nigeria, and Malawi (Kiplagat et al., 2022; Olamijulo et al., 2023). However, challenges remain regarding data privacy, cost of internet access, and the inclusivity of adolescents with limited digital literacy.

Critically, while interventions exist, their scalability and contextual adaptation remain limited. Most adolescent-centered programs in sub-Saharan Africa rely heavily on donor funding and lack sustainable integration into public health systems. Moreover, gender-sensitive programming remains inadequate despite evidence that adolescent girls and young women experience unique barriers related to social control, sexual exploitation, and gender norms (Mabaso et al., 2023). Therefore, a holistic model, combining economic empowerment, family support, school-based health education, and digital inclusion, is necessary to sustainably improve adolescent HIV care utilization in Kenya and similar contexts.

3. Methodology

This section outlines the methodological framework adopted to examine the utilization of Comprehensive Care Centers (CCCs) by adolescents living with HIV at Ahero Sub-County Referral Hospital in Kisumu County, Kenya. The methodology describes the research design, study site, target population, sampling procedures, data collection tools, ethical considerations, and analytical approaches. A mixed-method cross-sectional design was employed to obtain both quantitative and qualitative data, enabling a comprehensive understanding of the socio-demographic, economic, and psychosocial determinants influencing adolescents’ engagement with HIV care services. Quantitative data provided measurable insights into care utilization trends, while qualitative interviews captured lived experiences, contextual barriers, and enablers of HIV service uptake. The combination of these approaches enhanced the study’s validity, offering an in-depth and evidence-based perspective on adolescent HIV care utilization within the Ahero context.

3.1 Research Design

This study employed a cross-sectional mixed-methods design integrating quantitative surveys and qualitative interviews to examine the utilization of Comprehensive Care Centers (CCCs) by adolescents at Ahero Sub-County Referral Hospital in Kisumu County, Kenya. The design facilitated a comprehensive analysis of socio-demographic, economic, and psychosocial factors influencing access and utilization of HIV care services (Creswell & Plano Clark, 2022). Quantitative data provided measurable insights into service utilization, while qualitative interviews captured contextual experiences. Structured questionnaires were administered to adolescents aged 10–19 years living with HIV, complemented by in-depth interviews with key informants, including healthcare providers. The design was chosen for its efficiency, cost-effectiveness, and ability to provide triangulated evidence within a single data collection period (Babbie & Mouton, 2009).

3.2 Study Area

The study was conducted at Ahero Sub-County Referral Hospital in Nyando Sub-County, Kisumu County, western Kenya. Ahero Town lies approximately 20 km east of Kisumu City, an area characterized by high HIV prevalence and low uptake of care services among adolescents (Kenya HIV Estimates, 2023). The town, with a population of 61,556 (KNBS, 2019), is primarily agricultural and serves as a regional commercial hub due to its strategic location along major transport routes. The hospital was purposively selected because it offers established CCC services and records a significant adolescent HIV burden, making it an ideal site for exploring care utilization patterns.

3.3 Study Population and Sampling

The study population comprised adolescents aged 10–19 years enrolled in HIV care at Ahero CCC. According to county data, approximately 22% of the population falls within this age bracket (KNBS, 2019). The sample size of 264 respondents was determined using the Fisher et al. (1998) formula, assuming a 95% confidence interval, 5% margin of error, and 22% estimated prevalence of adolescents utilizing CCC services. Systematic random sampling was used to select adolescent participants proportionally from clinic records to ensure representativeness and minimize selection bias. Purposive sampling was applied for key informants, including healthcare providers and peer educators, based on their expertise in adolescent HIV care (Etikan & Bala, 2017).

3.4 Data Collection Methods and Tools

Quantitative data were collected using a semi-structured questionnaire designed in line with the study objective of examining the factors influencing adolescent engagement with CCC services in high-prevalence settings like Ahero Sub-County Referral Hospital, covering socio-demographic characteristics, knowledge of HIV, and engagement with CCC services. Qualitative data were obtained through in-depth interviews with selected adolescents and key informants to explore barriers and facilitators of service use. Data collection was conducted by three trained research assistants with backgrounds in public health and psychology. Training covered ethical protocols, interviewing techniques, and confidentiality safeguards. Interviews were conducted in English or Dholuo, depending on the participant's preference, and lasted 30–40 minutes. All participants below 18 years provided assent alongside parental consent.

3.5 Study Variables

The dependent variable was the *utilization of HIV care services* at the CCC. Independent variables included socio-demographic factors (age, sex, education, and occupation), psychosocial factors (stigma, family support), and knowledge of HIV care services (UNAIDS, 2023).

3.6 Data Analysis and Management

Quantitative data were coded and entered into SPSS version 26 for statistical analysis. Descriptive statistics summarized socio-demographic characteristics, while inferential tests examined associations between independent variables and service utilization. Results were presented in tables, graphs, and frequency distributions. Qualitative data were transcribed, coded, and analyzed thematically to complement quantitative findings. Themes included awareness of HIV services, stigma experiences, and structural barriers to care. This triangulated approach enhanced the reliability and validity of results by integrating numerical data with contextual narratives (Nowell et al., 2017).

3.7 Ethical Considerations

Ethical approval was granted by Nexus International University and Kenya's National Commission for Science, Technology, and Innovation (NACOSTI). Additional clearance was obtained from the Kisumu County Health Department. Informed consent and assent were obtained from all participants, ensuring voluntary participation. Anonymity and confidentiality were maintained by assigning unique identifiers rather than recording names. Participants were informed of their right to withdraw without penalty, consistent with WHO (2022) ethical guidelines for adolescent research.

3.8 Assumptions, Limitations, and Strengths

The study assumed that respondents would provide honest responses and that CCC operations would remain consistent during data collection. A key limitation was its confinement to a single facility, which restricts the generalizability of findings. Language barriers also limited participation to English and Dholuo speakers. Nonetheless, the study's mixed-methods approach and inclusion of both adolescents and service providers strengthened data triangulation and internal validity. Findings provide valuable insights into adolescent HIV care utilization in similar low-resource settings.

4. Results and Discussion

4.1 Socio-Demographic and Economic Characteristics

Table 1 presents the demographic profile of 264 adolescents aged 10–19 years attending the

Comprehensive Care Centre (CCC) at Ahero Sub-County Referral Hospital. Females comprised 58% of respondents, while males constituted 42%. The predominance of females aligns with regional HIV epidemiological trends showing higher infection rates among adolescent girls due to biological vulnerability, early sexual debut, and transactional relationships (UNAIDS, 2023; Ndugwa et al., 2022).

Table 1. Socio-Demographic and Economic Characteristics of Respondents (n = 264)

Variable	Category	Frequency	Percentage (%)
Sex	Male	110	42
	Female	154	58
Age (years)	10–15	104	39
	16–19	160	61
Marital Status	Single	257	97
	Married	5	2
	Cohabiting	2	1
Education Level	Primary	106	40
	Secondary	103	39
	Tertiary	13	5
	Non-formal	42	16
Religion	Christian	250	95
	Muslim	4	1
	Other	10	4
Occupation	Student	254	96
	Self-employed	10	4

Variable	Category	Frequency	Percentage (%)
Transport Mode	Walking	137	52
	Public	122	46
	Private/Bicycle	5	2
Distance to Facility	>10 km	81	31
	5–10 km	106	40
	1–5 km	66	25
	<1 km	11	4

Source: Field Data, 2025

Most adolescents (52%) walked to the CCC, indicating proximity challenges for many who traveled over 5 km. Similar findings by Okeke et al. (2020) show that distance to health facilities is a major determinant of service utilization among adolescents in rural sub-Saharan Africa.

4.2 Knowledge and Awareness of HIV and Care Services

While 72% correctly identified HIV as a virus, 10% lacked basic understanding, and misconceptions persisted about transmission. This mirrors Atekyereza (2014), who found knowledge disparities among adolescents in Northern Uganda.

Awareness of HIV care services was largely attributed to hospitals (80%), with fewer adolescents citing schools (4%) or family (10%) as information sources. This pattern underscores limited family-based dialogue on HIV, consistent with Kwaku (2013), who noted minimal parental involvement in adolescent health education in Ghana.

Adolescents reported familiarity with key CCC services including ART, counseling, and prevention of mother-to-child transmission (PMTCT). A key informant confirmed:

“CCC provides counseling, testing, ART, safe male circumcision, health education, and family planning.”

This multidimensional service delivery model aligns with WHO (2023) recommendations emphasizing integrated, adolescent-friendly HIV care.

4.3 Factors Influencing Utilization of HIV Care Services

Attitudes toward HIV care services varied considerably. While most respondents viewed CCC positively, as a life-sustaining and preventive platform, others expressed fatalistic beliefs, citing “no cure” as justification for non-engagement. Such perceptions echo findings by Musheke et al. (2019), who noted fatalism as a key deterrent to ART adherence among youth in Zambia.

Table 2. Reported Barriers to HIV Care Utilization

Barrier	Frequency	Percentage (%)
Long waiting time (>1 hour)	206	78
Stigma/Fear of being seen	37	14
Negative staff attitude	5	2
Distance/Transport cost	16	6
Lack of adolescent-friendly spaces	25	10

Source: Field Data, 2025

Waiting times exceeding one hour (78%) were the most cited deterrent, discouraging continuity of care. Similar observations were reported by Achieng et al. (2022) in Nairobi, linking long queues and inadequate staff sensitivity to poor adolescent clinic attendance. Stigma (14%) also played a substantial role, consistent with UNICEF (2023) findings that internalized stigma and confidentiality concerns are major obstacles for adolescents seeking HIV services.

4.4 Strategies for Improving Adolescent HIV Care Utilization

Respondents and key informants proposed strategies summarized in Table 3.

Table 3. Recommended Strategies to Enhance Adolescent HIV Care

Strategy	Percentage Endorsing (%)
Adolescent support groups	97
Dedicated clinic days	91
Weekend clinic hours	57
Peer educators	89
Media sensitization (radio, drama)	69

Source: Field Data, 2025

Awareness campaigns through drama, radio, and peer-led education emerged as critical drivers of behavioral change. One focus group member noted:

“Radio dramas and music events make youth more willing to test and know their status.”

Such creative engagement aligns with Gatta (2011), who emphasized the role of mass media and peer support in

overcoming stigma and increasing HIV service uptake among African youth.

4.5 Integrated Discussion

The study highlights that while awareness of HIV and available CCC services is relatively high, persistent structural and psychosocial barriers hinder optimal

utilization. Findings corroborate prior research (Achieng et al., 2022; Musheke et al., 2019) emphasizing the interplay between distance, stigma, and inadequate adolescent-centered care. However, the success of peer-driven and media-based interventions in improving engagement supports WHO's (2023) call for integrated, youth-friendly HIV care frameworks.

Overall, the results underscore that achieving equitable adolescent HIV outcomes requires health system reforms that address accessibility, stigma, and empowerment through participatory communication and service redesign.

5. Conclusion and Recommendations

5.1 Conclusion

This study examined factors influencing the utilization of HIV care services among adolescents aged 10–19 years attending the Comprehensive Care Centre (CCC) at Ahero Sub-County Referral Hospital, Kisumu County. The findings reveal a multifaceted interaction between socio-demographic, structural, and psychosocial determinants that shape adolescents' engagement with HIV care. Despite substantial awareness of HIV and the services offered at CCCs, utilization remains suboptimal, reflecting enduring barriers related to access, stigma, and adolescent-unfriendly service delivery models.

A key finding was the predominance of female participants (58%), aligning with epidemiological trends that show adolescent girls are disproportionately affected by HIV due to early sexual debut, gender-based violence, and social vulnerability. While most respondents demonstrated basic knowledge of HIV as a virus and recognized the availability of ART, testing, and counseling at CCCs, knowledge gaps and persistent misconceptions indicate the need for continuous, age-appropriate education. The majority of adolescents cited health facilities and hospitals as their main information sources, with minimal contribution from families or schools. This underscores the limited role of community and parental engagement in adolescent HIV awareness—a dynamic also reported in Ghana (Kwaku, 2013) and Uganda (Atekyereza, 2014).

Structural constraints, such as long waiting times, distance to facilities, and inadequate adolescent-focused spaces, emerged as major deterrents to service uptake. Over three-quarters of respondents reported waiting over an hour to receive care, a factor that diminishes motivation and perpetuates negative perceptions of CCCs. These findings echo Achieng et al. (2022), who observed that prolonged service delivery times and poor staff attitudes significantly reduce clinic attendance among youth in Kenyan urban settings. Additionally, psychosocial barriers—particularly stigma, fear of disclosure, and negative community perceptions—

remain pervasive. Adolescents often avoid CCCs out of fear of being seen or labeled, consistent with UNICEF's (2023) findings on stigma as a primary barrier to adolescent engagement in HIV care.

Despite these challenges, the study identified promising opportunities for improvement. Adolescents expressed strong support for peer-led education, age-segregated clinic days, and mass media sensitization through radio dramas and music. These interventions foster familiarity, confidentiality, and comfort, factors shown by Gatta (2011) and Musheke et al. (2019) to enhance youth participation in HIV prevention and treatment programs. The high level of satisfaction (69%) with ongoing community sensitization demonstrates that innovative, culturally resonant communication strategies can effectively reach adolescents, even in resource-constrained settings.

Overall, this study concludes that improving adolescent utilization of HIV care services requires more than infrastructural investment; it demands a paradigm shift toward holistic, youth-centered health systems. Interventions must be contextually tailored to address gender disparities, social stigma, and information asymmetries while strengthening supportive community structures. Sustainable adolescent engagement in HIV care is central to achieving the UNAIDS 95-95-95 targets and the broader Sustainable Development Goal (SDG) of ending the AIDS epidemic by 2030.

5.2 Recommendations

From the findings, the following recommendations are suggested:

1. Strengthening Adolescent-Friendly Health Services

The Ministry of Health, in collaboration with county governments, should institutionalize adolescent-friendly spaces within all CCCs. Dedicated clinic days, flexible operating hours (including weekends), and confidential service points would enhance comfort and encourage sustained engagement.

1. Enhance Peer-Led and School-Based Education Programs

Peer educators and school-linked health clubs should be empowered to provide accurate information about HIV transmission, care, and ART adherence. Integrating life-skills and reproductive health education into school curricula can normalize HIV discussions and reduce stigma.

2. Invest in Community Sensitization and Media Campaigns

Expanding the use of interactive radio dramas, social media platforms, and music-based outreach can bridge information gaps and destigmatize HIV testing. Media content should be youth-centered, participatory, and developed in collaboration with adolescents to ensure relevance.

3. **Improve Service Efficiency and Staffing at CCCs**

Long waiting times and inadequate staffing contribute to negative clinic experiences. The County Department of Health should deploy additional personnel and adopt digital appointment systems to minimize delays and improve client satisfaction.

4. **Integrate Psychosocial and Economic Support Systems**

Comprehensive psychosocial support, including counseling and family therapy, should be mainstreamed into HIV care. In addition, livelihood programs targeting adolescents from low-income households could mitigate indirect economic barriers to accessing care.

5. **Promote Gender-Responsive Interventions**

Given the disproportionate vulnerability of adolescent girls, programs should integrate gender-sensitive approaches addressing early marriage, sexual coercion, and power imbalances in relationships. Engaging boys and young men as allies in HIV prevention is equally critical.

6. **Strengthen Data Collection and Monitoring Systems**

Routine disaggregation of HIV care data by age and gender at facility level would improve evidence-based decision-making. Regular feedback from adolescent clients should inform service redesign and performance evaluation.

5.3 Policy Implications

The findings hold significant implications for national HIV policy and adolescent health programming in Kenya. Embedding adolescent-responsive care within the Kenya AIDS Strategic Framework and the Adolescent Sexual and Reproductive Health (ASRH) Policy would institutionalize youth participation in health governance. Additionally, decentralizing HIV care through community health volunteers and mobile clinics could bridge access gaps in rural and peri-urban areas. Addressing stigma through coordinated community dialogues and peer-advocacy platforms will foster an enabling environment for sustained engagement.

In sum, advancing adolescent HIV care requires a multisectoral, rights-based approach grounded in empowerment, inclusivity, and systemic responsiveness. Translating these findings into policy and practice will not only improve adolescent health outcomes but also strengthen Kenya's progress toward ending AIDS as a public health threat by 2030.

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