Research Paper: Policy Implications of AI, Data Silos & Adolescent Health in Sub Saharan Africa

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1. Introduction

Artificial intelligence (AI) has the potential of transforming the global health landscape by strengthening health systems and advancing the United Nations (UN) Sustainable Development Goals (SDGs). With 17 SDGs and 169 targets, there is great potential for AI to support health priorities of marginalized groups across the globe. Be that as it may, data siloization is limiting the future potential of digital health tools and innovative technologies.

Youth represent a growing demographic in Sub Saharan Africa (SSA); 70% of the SSA population is under the age of 30 (United Nations, 2025). Within that demographic, adolescents are especially vulnerable to experiencing the gaps in health systems. SSA adolescents are the fastest-growing population in the world (Sequeira et al., 2022). HIV, Adolescent mental health (AMH), and adolescent sexual health (ASH) are highly informed by the social determinants of health (SDH) in the region. Though progress has been made in mitigating these health issues, recent data indicates that the persistence of siloization is a barrier. Current AI pilots for adolescent health needs remain small-scale and can be hindered by the siloization in the health infrastructure of the region (Korteling J et al, 2021; Konar, 2024; Schlieter et al., 2022). In this research paper, I will be seeking to answer the following question:

What forms of data and research siloization currently prevent AI tools from supporting adolescent health priorities in SSA — and how can cross-sectoral frameworks better align AI with global health goals?

My hypothesis is that the silos inhibiting AI from supporting AMH, ASH and preventative HIV services for adolescents are vertical, institutional and ethical. In other words, for AI to align with global health goals that relate to AH needs, such as SDG 3 (Good Health and Wellbeing), SDG 5 (Gender Equality), and SDG 10 (Reduced Inequalities), there must be a cross sectoral framework that mitigates these silos through horizontal programs, multiinstitutional collaboration and youth engagement. However, the successful implementation of AI in this domain requires addressing systemic barriers, including inadequate digital infrastructure, limited AI literacy, and cultural resistance. A comprehensive approach is needed-one that includes robust policy frameworks,

capacity building for healthcare workers, and equity-focused strategies to ensure marginalized and rural populations are not left behind. Cross-sector collaboration among governments, tech companies, and civil society is also crucial to fostering innovation and sustainability.

My analysis begins with a dissection of the silos inhibiting AI alignment with global health goals, followed by an overview of youth health needs in SSA. This research paper will then examine the current state of AI research in HIV prevention, AMH and ASH. This paper will conclude with a case study of an IDRC funded global health initiative's approach to data socialization and lessons learned which could be applied to IDRC's ongoing AI program, AI4D (Artificial Intelligence for Development Africa)

2. Defining Data & Research Siloization

As AI innovation becomes more deeply embedded in health systems to collect, share, and govern data, its potential to scale and broaden impact is constrained by data siloization. Vertical, institutional, and ethical silos undermine the capacity of AI tools to respond effectively to adolescent health priorities in SSA. Together, these silos shape how data is shared, if programs can be cross-sectoral, and how reliably AI models can generate consistent and equitable insights across diverse adolescent populations.

2.1 Vertical Silos

Silos at the program level emerge with short-term, vertical projects which are funded for singular health outcomes and are implemented independently of broader health systems. Vertical healthcare services are often specialized interventions which focus on a single condition or issue (Frenk et al., 2010). Vertical programs that are successful in attracting donor funding typically have measurable outcomes, transparent scope and the ability to rapidly mobilize resources for specific diseases (Mullan et al., 2011). However, drawbacks to vertical programs are apparent when reviewing the siloiizing impact it has on the overall health system.

Vertical initiatives typically operate in isolation and are implemented independent from the general health system. The consequences of this siloization can contribute to (1) fragmented healthcare delivery, (2) duplication of initiatives, (3) uneven resource allocation, and (4) limited

cross-program learnings (Barrier, 2024). Research suggests that, in overfunding the services of some health issues, vertical programs eclipse the underrepresented needs of other critical health areas (Barrier, 2024). In the context of adolescent priorities in SSA, this dynamic has led to expansive programming in HIV over the last decade, but comparatively limited funding for mental health and other high-burden conditions (Barrier, 2024).

2.2 Institutional Silos

IInstitutional silos emerge when actors from different sectors work under distinct standards, frameworks and governance principles. While global health infrastructure is theoretically multidisciplinary, institutions frequently operate in isolation from each other. Healthcare institutions specifically actually face institutional logics that uphold professional and departmental ranking and segregation (Vivier et al., 2024). Uniform data collection methods and data ontologies vary among service providers and systems like healthcare, education, non-governmental organizations (NGOs) and civil society organizations (CSOs). This results in incompatible technologies, varying performance metrics and limited opportunities for synchronized interventions (Vivier et al. 2024). This compartmentalization directly hampers the creation of AI systems developed on datasets that are extensive, representative and impartial.

When research is siloed within institutional boundaries, the data collected risks only representing certain portions of adolescent groups. For example, if marginalized youth are not adequately represented in training data, AI systems may generate insights that do not apply to them, further marginalizing those already often excluded (e.g. adolescents with disabilities, LGBTQ+ adolescents, etc.). Consequently, when global health interventions are piloted across institutions without proper communication or shared ethical principles, there is an increased risk that the AI tools created will have these blind spots and perpetuate preexisting inequities and biased datasets. The absence of strong institutional linkages can weaken research participant trust, which is an essential factor of the long-term usability and relevance of digital health tools for young people.

2.3 Ethical Level

Ethical silos broadly refer to standards regarding privacy, consent procedures, risk reduction methods and supervisory frameworks within health research (Stahl et al., 2021). There remains a lack of research and agreement on approaches to involve adolescents securely and effectively in data gathering and study involvement. Ethical silos emerge in instances when:

- Youth rights are not directly addressed.
- Data is gathered without implementing age-appropriate consent procedures.
- Institutions differ greatly in their privacy safeguards.
- Studies carried out in an area are transferred by developers to other locations, yet the local populations do not gain from the insights produced concerning them.

When AI tools are trained on ethically compromised or incomplete datasets, they risk producing exclusionary outputs that reinforce stigma and inequities. Beyond reproducing bias, the data that underpins AI innovation should be collected in ways that reflect community priorities and ethical expectations. Robust ethics strategies are therefore needed to ensure that adolescents have a clear understanding of their level of engagement in data collection, as well as how their data can be accessed and used in the future (Stahl et al., 2021).

2.4 Adolescents as a Key Demographic in SSA Global Health

The emphasis on adolescents in my research is intentional. Deficiencies in research priorities, methodologies and data management obstruct the harmonization of AI technologies with global health objectives. Adolescents in SSA experience intersecting vulnerabilities in MH, SRH and HIV but their data is often underrepresented, scattered or gathered within limited program frameworks (Tsandzana, 2022). Consequently, they reveal the extent and magnitude of shortcomings.

Young people are not merely recipients of health initiatives; they act as key players whose health outcomes fundamentally impact advancements toward the SDGs While no SDG is solely focused on adolescents, one third of the 169 SDG targets emphasize the well-being, empowerment and involvement of young people (United Nations, 2017). Given that the SDG Agenda is structured with long-term timelines, young people play a key role in realizing health-related objectives that develop over many years.

3. Adolescent Health Priorities in SSA

For youth, health inequalities are strongly shaped by broader social structures that they cannot control, such as ethnicity, family income, housing conditions, and the stability of parental employment (Adekola, 2025). Adolescents however are at a transitionary period between youth and adulthood wherein they have more agency to make self-determined decisions. Be that as it may, in low and middle-income countries (LMICs), adolescents often face barriers that limit their opportunities to actively engage in the healthy behaviours that play a role in improving health outcomes that are in their reach (Musindo et al., 2023). Consequently, there are SDH which significantly impact this demographic's access to preventative education, information, and services which would otherwise support their development and decision making (Pradhan et al., 2015).

3.1 Mental Health (MH) & Adolescent Mental Health (AMH)

Young people in LMICs face a disproportionate share of prevalent mental health disorders (Hart et al., 2024). In SSA, health burden is exacerbated by factors such as poverty, food insecurity, unemployment, education exclusion, unplanned pregnancy and exposure to conflict and violence (WHO, 2024; Hart et al., 2024). The intersection of these challenges complicates efforts to effectively prevent, detect, and treat adolescent depression and anxiety (Jakobsson et al., 2024).

Frequent mental health issues like depression and anxiety typically appear during adolescence whereas more serious long-lasting disorders such as schizophrenia and bipolar disorder emerge in early adulthood (Hart et al., 2024). A 2021 meta-analysis covering 63 studies

with 55,071 adolescents in SSA found that 26.9% suffered from depression, 29.8% from anxiety, 40.8% from behavioural challenges, 21.5% from post-traumatic stress disorder (PTSD) and 20.8%, from suicidal thoughts (Jakobsson et al. 2024). These elevated prevalence figures highlight the necessity to broaden the availability of empirically supported mental health treatments (Cortina et al. 2012; Jakobsson et al. 2024).

When mental illnesses are unaddressed, adolescents are more likely to engage in substance abuse, interpersonal violence and social exclusion. Exclusion is debilitating, and creates a vicious cycle where the feelings of rejection worsen symptoms, making it harder to reintegrate in society (Hart et al, 2014; Olca et al., 2025). As such, urgent and sustained investment in AMH early detection, psychosocial support, and culturally appropriate care, is critical to improving long-term health and well-being in the region (Hart et al., 2024).

3.2 Sexual & Reproductive Health (SRHR), Sexual & Reproductive Health (SRH), Adolescent Sexual Health (ASH)

Sexual and reproductive health and rights (SRHR) covers an array of services, such as contraception availability, maternal and perinatal care, and education on gender-based violence in relationships (WHO, 2025). Achieving universal access to SRH not only improves health outcomes but also promotes gender equality and broader development goals (WHO, 2025).

Be that as it may, quality ASH in SSA is limited by factors such as restricted gender roles, religious belief and a lack of knowledge regarding the variety and implications of SRHR (Boamah et al. 2014). Key regional factors contributing to SRHR obstacles in SSA encompass poverty and disparity strained and insufficiently funded health and education infrastructures along with firmly rooted damaging gender roles and socio-cultural customs (Melesse et al., 2020; Starrs et al. 2018). In addition, young people seeking contraceptives or reproductive health services often face stigma, criticism, and systemic obstacles (Hart et al., 2024). In rural regions, limited clinic presence, extensive travel requirements and transportation shortages further obstruct access (Lynch et al. 2025).

Gaps in service delivery and quality can cause adolescents to gravitate towards unsafe

alternatives which may permeate longlasting health outcomes. Disapproving attitudes from healthcare providers are proven to discourage service use, and negative staff behaviour in abortion services may drive young people toward “backstreet” methods with high risks of morbidity and mortality (Maharaj, 2022).

In the absence of SRH services, the needs of adolescents persists. Without preventative and supportive resources established in a country, adolescents are more likely to experience unsafe abortions, unintended pregnancies and heightened risk of STIs and HIV (Ninsiima et al., 2021). Despite the SDG target for universal access to SRH services by 2030, progress to integrate SRHR into national programmes remains even across SSA (WHO, 2024).

3.3 HIV

Among the three health challenges discussed in this paper HIV has experienced the most encouraging advancements in recent times. In Eastern and Southern Africa new HIV infections have dropped by 72% in children 0–14 and by 57%, in those aged 15–19 since 2010— marking one of the most significant global health successes in recent decades (UNICEF, 2024). However, considerable deficiencies still persist as HIV testing levels remain alarmingly insufficient. Although 77% of adults living with HIV are on therapy (ART) just 57% of children aged 0–14 and 65% of adolescents aged 15–19 have access to ART (UNICEF, 2024). This disproportion can be explained by the fact that adolescents have limited treatment availability and experience increased social vulnerabilities that exacerbate long-term health consequences compared to adults (UNAIDS, 2021; Teasdale et al. 2025)

Even though SSA carries almost 90% of the global HIV cases within the adolescent demographic, under 20% of adolescents know their HIV status (Iwelunmor et al., 2021; Adekola, 2025). The risk and consequences of HIV are intensified by social determinants of health (SDH) such as poverty, gender-based violence and inadequate access to thorough SRHR education, all of which diminish adolescents’ capacity to safeguard themselves or obtain prompt care (UNICEF, 2025). Current studies highlight the necessity of models that tackle determinants like gender

roles, education and exposure to violence (Obeagu et al., 2023). If left unmanaged HIV may advance to AIDS and other severe health problems requiring expensive treatment. In health systems that are fragile, late diagnosis adds further expectations on already scarce resources.

3.4 Cross-sectoral opportunity? Mental health, SRHR and HIV prevention

The literature review conducted for this paper (scope of 2020-2025), demonstrates both directly and indirectly that mental health MH, SRH and HIV are closely linked to adolescent health issues in SSA. The underlying reasons influencing these three areas are heterogeneous and differ across countries in SSA. That being said, the recurring factors that emerge through the literature review were poverty, gender and exposure to conflict and violence(Maharaj, 2022; Thalia, 2024; Hart et al, 2024)

The overlapping and interconnected relation of these health issues highlights why data siloization is especially harmful. Independent research conducted in one health area often contains insights relevant to another. Integrating AI in an already siloed data landscape has the risk of overlooking these health intersections (Thalia, 2024).

Although AI tools are already showing progress in supporting adolescent health priorities in SSA, the vertical, institutional and ethical silos limit their ability to address the full complexity of adolescent wellbeing. Coordinated research efforts are more likely to improve service delivery in resource-limited settings (Firoz et al., 2022). Achieving global health goals with the help of AI is more possible through a cross-sectoral framework that mitigates fragmentation, strengthens health system responses and identifies the SDH influencing adolescent outcomes. Fulfilling youth SRHR needs in SSA, in particular, demands sustained commitment across sectors to evidence-based, youth-focused strategies that centre adolescents' perspectives and lived experiences (Uka et al., 2024).

4. Adolescent Health Outcomes - Promise and Gaps of AI

4.1 Ethical Silos in AI Adolescent Mental Health

Although adolescents gravitate towards digital tools for health resources and promotion (Ferretti et al., 2023), MH services in LMIC regions are inadequately funded and insufficiently developed (Emsley, 2001). In contrast to SRH, AMH seldom receives specialized funded programs; in numerous settings "mental health treatment is available only in regional and district hospitals and seldom in integrated health facilities" (Agyepong, 2025 p. 21). Expanding interventions in SSA requires strategic funding that is underscored by the theologies, cultural realities and socioeconomic classes which inform mental health (Jakobsson et al. 2024).

Young people struggling with health issues encounter stigma resulting in increased distress, discrimination and social exclusion (Thornicroft et al., 2022).The anxiety projected on by elders, family members, and medical professionals can also prevent them from seeking assistance. This discourages adolescents from pursuing early treatment, which in turn perpetuates a cycle of neglect (Hart et al., 2024).

The global data ecosystem is currently one in which certain actors, typically located in high-income countries, have disproportionate control over data systems. This has the risk of perpetuating a skewed power imbalance, wherein the powerful have the capacity to extract data from those with less power, without adequate sharing of benefits (Arora et al. 2023). Young people frequently remain unaware of how their data is utilized or if it advances the needs of their communities. The lack of engagement with adolescents fosters mistrust and reduces willingness to engage with AI-enabled programmes long term. As future implementers and end-users, it is essential that adolescents are meaningfully engaged by service providers and AI developers in the implementation of interventions. This participatory framework should include clear standards on privacy, consent, and bias prevention (WHO, 2021; Effoduh et al., 2021).

4.2 Institutional Silos in Adolescent SRHR

SRHR interventions have been critical in addressing gender-based violence, sexism, and gender-related discrimination among adolescents. SRHR remains a popular target of digital health advocacy, with projects largely financed and backed by foundations, CSOs and NGOs (Zulu et al. 2021).

Nevertheless the siloization within institutions hinders the potential of future AI initiatives. Organizations function with criteria, metrics and data frameworks that complicate the interoperability of AI models across sectors and context. Due to the fact that every organization employs its standards and definitions SRHR results are assessed inconsistently which can hinder unified advancement toward global health targets (Vivier et al., 2024).

The wide range of stakeholders engaged in SRHR (healthcare providers, community organizations, educational institutions and global agencies) increases the potential of informing AI with datasets tailored to local realities. This potential is increased when implementation of AI innovation includes key community health actors such as community-based health workers (CBHWs), teachers, and community leaders, who can integrate SRHR training and service delivery across community settings (Chavula et al., 2021; Schneider et al. 2022). This coordination is essential to ensure that young people can access the SRH services of their choice from trusted stakeholders within their own communities (Zulu et al., 2021).

4.3 Vertical Silos in Adolescent HIV

In SSA, HIV is well-known as one of the more financed topics in adolescent health. The significant degree of programming has turned HIV into a key focus for donors; nevertheless this resource concentration has negative implications for the overall health infrastructure of a nation. Adolescent mental health in SSA is often neglected due to competing public health demands with, under 1% of health expenditures dedicated to mental health (Hart et al. 2024). The COVID-19 crisis intensified pressure on SRH services with resources being reallocated in a manner that worsened adolescents' challenges in obtaining care (Banda et al., 2022).

Key international organizations like WHO, the Global Fund and UNAIDS have HIV strategies that correspond with SDG target 3.3 to eliminate the HIV epidemic by 2030. However the potential of AI to develop tools benefiting all adolescents in SSA is limited if HIV interventions are not designed and executed with an intersectional approach. This fragmentation impacts AI research significantly. When AI pilots use isolated, program- datasets, the developed tools fail to generalize across diverse adolescent groups or address complex intersecting health determinants. In the absence of governance frameworks that promote data

coordination, AI systems face to deliver consistent results across varying adolescent subgroups (Tetu et al., 2021).

5. Case Study – IDRC's ADWOA Program

This section uses IDRC's AdoWA program as an illustrative case of how a youth-centered design can mitigate vertical, institutional, and ethical silos in adolescent health systems in SSA. AdoWA provides lessons on governance and implementation which are highly compatible with scalable, equitable AI initiatives for adolescent MH, SRH and HIV prevention.

AdoWA (AdoWA-GTR), funded by IDRC, was implemented in Ghana, Niger, and Burkina Faso under the broader GT4Africa program, *"Advancing Sexual, Reproductive and Maternal Health Innovations using Gender Transformative Approaches."* The project's general objective was to co-design and pilot context-specific interventions that address AMH and ASRH needs. Rather than treating adolescent mental health and sexual and reproductive health and rights as separate program streams, AdoWA explicitly framed them as deeply intertwined. As Agyepong et al. notes, "adolescents (10–19 years) form almost a quarter of the population in West Africa, the highest proportion of any region in the world," yet adolescent mental health and its interlinkages with SRHR remain "a neglected area of concern." (Agyepong et al. 2025, 7–8)

AdoWA responds by embedding WHO's intersectional gender analysis and adopting a participatory action research (PAR) design that engages adolescents, communities, and frontline providers "in the design and execution of this study," from context analysis to intervention co-production. (Agyepong et al. 2025, 13–14) This architecture is what allows AdoWA to actively tackle vertical, institutional, and ethical silos.

5.1 Overcoming Ethical Silos

Ethical silos in adolescent health emerge when power imbalances, taboos, and adult-centric decision-making exclude young people from shaping the interventions that govern their lives. AdoWA addressed these barriers through deliberate strategies to create safe, context-sensitive spaces for participation. In Ghana, the team explicitly responded to male-dominated discussions by organizing separate forums for girls and boys. This allowed girls to speak more

candidly about their experiences. In Niger, researchers introduced confidence-building activities before co-creation sessions to narrow power gaps between boys and girls and help adolescents feel able to challenge norms.

Arts-based methods such as theatre also proved central to an ethical shift because youths were able to share insights to a degree that would have been impossible in conventional interview settings. Adolescents used drawings and performance to express perspectives on "parental neglect, peer pressure, stigmatization, substance abuse, teenage pregnancy, abortion, gender roles, and mental health challenges." (Agyepong et al. 2025, 32–33). Altogether, these methods functioned as data collection tools and as ethical practices; they respected adolescents' dignity and recognized them as knowledge-holders. In doing so, AdoWA positioned adolescents as active and legitimate actors in the interventions, encouraged to debate about norms, services, and rights.

5.2 Overcoming Vertical Silos

Despite the interconnectedness of MH and SRH, they are often siloed into separate vertical funding streams and delivery mechanisms. Instead of treating mental health projects' and SRH projects as separate, AdoWA co-created interventions that addressed both simultaneously. Through art, adolescents demonstrated how early pregnancy, forced marriage, sexual violence, and poverty can translate into anxiety, depression, low self-esteem, and in some cases suicidal ideation An example of this is emphasized in AdoWa's Theatre for Development (TfD), which is a dynamic and participatory form of theatre that integrates performance with community engagement to address social, political, and developmental issues. TfD pieces often wove together themes such as bullying, peer pressure, transactional sex, unwanted pregnancy, parental neglect, and psychological distress. An integrated framing shifts the scope of single-issue campaigns into a holistic program expanding on wellbeing. The intersectionality of health areas diminishes the likelihood of the distortions that arise when programs chase a single set of indicators without attending to mental health or gendered power.

5.3 Overcoming Institutional Silos

Institutional silos arise where ministries, schools, religious bodies, and health services adhere to different value systems and standards. Conflicting mandates limit access to information and services that adolescents need to make decisions. The suspicion toward 'gender transformative' language and the ongoing restrictions on SRH education in schools are all evidence of the differing values between education, health, and religious institutions (Agyepong et al. 2025, 40).

AdoWA did not attempt to resolve these institutional tensions through confrontation alone. Instead, it uses relational strategies to relax silo borders and create shared spaces of negotiation and trust-building. By making it clear that interventions were about co-creating relevant solutions, AdoWa cultivated iterative, cross-sectoral dialogue. Though these processes did not eliminate conflict, they demonstrated that multi-sectoral collaboration is possible when researchers work *with* the political and normative landscape, rather than against it.

6. Lessons for Future AI Implementation

The implementation of AdoWA shows that IDRC already has a strong foundation for fostering scalable, context-appropriate interventions that align with global health goals on adolescent MH, SRH and HIV prevention. Embedding AdoWA's lessons into AI4D–FCDO's funding calls, investment criteria, evaluation standards, and partnership structures would increase the capabilities of future AI systems for inclusive adolescent health.

When analyzing AdoWA as a *governance and design template* for AI-enabled health initiatives under programs such as AI4D, three transferable principles emerge.

1. Ethical governance through youth-led design
   AdoWA's commitment to safe spaces, arts-based expression, and adolescent co-creation suggests that responsible AI for adolescent health should not be built "for" youth, without them. Instead, design processes and evaluation metrics need to integrate youth perspectives from the outset, particularly those of girls and other marginalized groups.
2. Integrated indicators to avoid biased AI models
   Because AdoWA treats ASRH and AMH as interconnected, its interventions resist the

fragmentation that leads to biased or blind AI systems (for example, models that only see pregnancy outcomes but ignore mental health costs or gendered harms). AI projects drawing on AdoWA-like data architectures would be better equipped to capture cross-cutting vulnerabilities and avoid reinforcing narrowly defined targets.

3. Cross-sectoral data stewardship to overcome institutional fragmentation AdoWA's experience with health, education, and religious actors shows that data and decision-making are spread across sectors with conflicting norms. AI4D investments that mirror AdoWA's cross-sectoral engagement are more likely to secure a diverse data pool and build the trust necessary for data sharing.

Conclusion

In conclusion, this research paper explored the persistent data silos that hinder health priorities in SSA. These overlapping silos reduce the ability of AI tools to meet the needs of adolescents, who experience intersecting health challenges in MH, SRH and HIV (Morison & Mavuso 2022). Frameworks like AdoWA illustrate how youth involvement, integrated program planning and multi-institutional collaboration can create a robust foundation for scalable AI tools.

Ultimately, global health challenges do not occur independently; they are intricate, interconnected and influenced by social factors (Crenshaw, 1991. To advance SDG 3, SDG 5, and SDG 10 in SSA, AI must be embedded in transparent and inclusive governance frameworks. By applying lessons from AdoWA to the AI4D program, IDRC would position itself to invest in ethically grounded AI innovations that respond to cross-cutting adolescent needs in the SSA region.

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Search Strategy

	Included	Excluded
Article Type	● Peer reviewed research ● Conference notes, guest essay and commentaries ● International Organizations ○ World Health Organization (WHO) ○ United Nations ● Academic Journals and Search Engines ○ MacOdrum Library ○ Google Scholar, PubMed ○ PsycInfo, Pubmed, AfriBib ● Government Resources ● Grey Sources ○ News Articles ○ National Library of Medicine	● Wikipedia
Methodology	● Qualitative studies ● Quantitative studies	
Geographic Scope	● African continent ● Developing Countries ● LMICs	● non-African countries ● High-Income Countries (HIC)
Time Frame	● 2020 to present	● Pre 2022
Age Range	● 10 - 19 years old	

Population: The target population of this research paper is youths between the ages of 10-19 years old. This is the definition of adolescents as defined by the World Health Organization (WHO, 2025). Excluded groups within the adolescent category were homeless, internally displaced adolescents, and refugees as their needs may differ substantially due to their situation.

Context: Low-middle income countries (LMICs) located in Sub-Saharan Africa.

Publication types and study design: Inclusion was limited to published, peer-reviewed studies. Grey literature was consulted only when I needed preliminary context and wanted more information that did not end up in my paper but aided with understanding. Qualitative studies and mixed methods studies with distinct qualitative components (example, interviews, focus groups, observations) were included as they provide deeper understanding of adolescent needs.