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How Do Teenagers in Africa Manage Their Health? A Systematic Review of Practices, Challenges, and Pathways to Intervention

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Abstract: *Adolescence represents a critical juncture for establishing health behaviors that shape long-term well-being, yet teenagers in Africa navigate this developmental phase within contexts marked by significant structural and systemic vulnerabilities. With the adolescent population on the continent projected to reach 1.3 billion by 2050, understanding how this demographic manages its health is imperative for achieving Sustainable Development Goal 3. This systematic literature review synthesizes evidence from 2012 to 2023 to examine the health management practices of African teenagers and the challenges they encounter. Following PRISMA guidelines, a systematic search of Google Scholar, WHO, UNICEF, the Journal of Adolescent Health, and the International Journal of Health yielded 513 articles, of which 30 met stringent inclusion criteria for qualitative synthesis. The findings reveal a paradoxical landscape wherein health-enhancing practices; such as protective gear use, healthy eating, and physical activity; coexist with pervasive health-risk behaviors, including substance use, unsafe sex, unsafe abortion, and sedentary lifestyles. Critically, these risk behaviors are not merely individual choices but are systematically reinforced by profound structural barriers: inadequate sexual and reproductive health (SRH) knowledge, prolonged queues and inconvenient hours at health facilities, lack of privacy, negative provider attitudes, and severe financial constraints limiting access to nutritious food and contraceptive commodities. Socio-cultural determinants, including early marriage, religious prohibitions, and peer influence, further compound these challenges. This review makes an empirical contribution by demonstrating that fragmented interventions targeting individual behavior change are insufficient in isolation; instead, the evidence points to a confluence of systemic failures that collectively undermine adolescent health. From a policy standpoint, the findings necessitate a paradigm shift toward integrated, adolescent-responsive health systems that embed comprehensive SRH and nutrition education within school curricula, enforce adolescent-friendly service standards across all health facilities, and address economic barriers through targeted social protection programs. Concerted action across health, education, and social welfare sectors is essential to dismantle the multifaceted obstacles African teenagers face. Failure to do so will perpetuate cycles of preventable morbidity, compromise the continent's demographic dividend, and delay progress toward universal health coverage. This review recommends that governments and development partners prioritize co-designed interventions with adolescents themselves, ensuring that health services are not only available but also accessible, acceptable, and equitable for all teenagers regardless of socioeconomic status, gender, or geographic location.*

Keywords: *Adolescent health management, Health risk behaviors, Structural barriers, Sexual and reproductive health, African youth*

1. Background Information

Adolescence, defined by the World Health Organization as the period between 10 and 19 years of age, represents a critical developmental phase characterized by profound physical, psychological, emotional, and social transformations (World Health Organization, 2023). This transitional period is not only foundational for individual health trajectories but also serves as a pivotal determinant of population health outcomes and broader societal development (Patton *et al.,* 2016). The health-related behaviors and practices established during adolescence often persist into adulthood, influencing the risk profiles for non-communicable diseases, mental health disorders, and infectious diseases across the life course (Sawyer *et al.,* 2012). Consequently, how teenagers manage their health, through dietary choices, physical activity, sexual behaviors, substance use, and engagement with health services, has profound implications that extend far beyond the adolescent years.

Globally, the adolescent population has reached unprecedented proportions. By 2022, the number of individuals aged 10 to 19 years stood at approximately 1.3 billion, representing the largest cohort of adolescents in human history (UNICEF, 2022). This demographic reality is particularly pronounced in Africa, where adolescents constitute nearly a quarter of the continent's population, and projections indicate that this number will double by 2050 (United Nations, 2022). While this demographic dividend presents immense potential for economic growth and social transformation, it simultaneously creates an urgent imperative to address the unique health needs of this population. Failure to do so risks not only compromising the well-being of millions of young people but also undermining progress toward the Sustainable Development Goals (SDGs), particularly Goal 3, which mandates ensuring healthy lives and promoting well-being for all at all ages (United Nations, 2015).

The health landscape for African teenagers is characterized by a complex interplay of persistent communicable diseases, rising non-communicable diseases, and significant structural vulnerabilities (World Health Organization, 2021). Sub-Saharan Africa, in particular, bears a disproportionate burden of adolescent health challenges, including the highest rates of HIV incidence among young people aged 15–24 years globally (UNAIDS, 2022), the highest adolescent pregnancy rates outside of South Asia (United Nations Population Fund, 2020), and increasing prevalence of mental health disorders (Kieling *et al.,* 2019). These health outcomes are not merely clinical phenomena but are deeply embedded within broader social, economic, and cultural contexts. Poverty, gender inequality, limited educational opportunities, and weak health systems collectively create environments where health-risk behaviors flourish while health-enhancing practices remain elusive (Viner *et al.,* 2012; Azzopardi *et al.,* 2019).

Health management among teenagers encompasses both the adoption of health-enhancing practices, such as healthy eating, regular physical activity, safe sex practices, and appropriate health-seeking behaviors; and the avoidance or mitigation of health-risk behaviors, including substance use, unsafe sexual practices, and sedentary lifestyles (Song, 2020; Sousa *et al.,* 2014). The concept of health management extends beyond individual behavior to include how young people navigate health systems, access information, and overcome barriers to care. In Africa, this navigation is often complicated by significant structural impediments. Research has documented widespread inadequacies in sexual and reproductive health (SRH) knowledge among adolescents, with many young people lacking accurate information about contraception, sexually transmitted infections, and puberty (Kaale & Muhanga, 2017; Nkata *et al.,* 2019). Health systems themselves frequently fail to accommodate adolescents, with long queues, inconvenient operating hours, lack of privacy, and negative attitudes from health providers creating formidable barriers to care (Chingono *et al.,* 2021; Nmadu *et al.,* 2020). Financial constraints further compound these challenges, limiting access to nutritious food, contraceptive commodities, and essential health services (Abu Hamad *et al.,* 2021; Moshi & Tilisho, 2023).

The consequences of inadequate health management during adolescence are both immediate and long-term. In the short term, health-risk behaviors contribute to preventable morbidity and mortality through road traffic injuries, substance-related harms, unsafe abortions, and sexually transmitted infections including HIV (Morris & Rushwan, 2015; Patton *et al.,* 2009). In the long term, behaviors established during adolescence, such as poor diet, physical inactivity, and tobacco use; lay the foundation for chronic diseases including cardiovascular disease, diabetes, and cancer in adulthood (Bélanger *et al.,* 2013; Alkhouri *et al.,* 2022). The intergenerational effects are equally significant, with adolescent pregnancy associated with higher risks of maternal mortality, low birth weight, and compromised educational and economic outcomes for both mothers and their children (Neal *et al.,* 2012; World Health Organization, 2020).

Despite growing recognition of adolescent health as a global priority, evidence synthesis specifically focused on African teenagers remains fragmented. Existing reviews have often been regional in scope, focused on specific health domains such as SRH or nutrition, or have aggregated adolescent data with broader age ranges (Salam *et al.,* 2016; Patton *et al.,* 2016). A comprehensive, continent-wide synthesis that systematically examines both the practices teenagers engage in and the challenges they face in managing their health is urgently needed. Such a synthesis is essential for informing evidence-based policies, guiding resource allocation, and designing interventions that are responsive to the specific contexts and needs of African adolescents. The Sustainable Development Goals, particularly Goal 3, cannot be achieved without deliberate and sustained investment in adolescent health. As the demographic trajectory of Africa continues to shift, the health and well-being of its teenagers will increasingly determine the continent's development trajectory.

Therefore, this systematic literature review was conducted to assess the health management practices of teenagers in Africa and to identify the multifaceted challenges they encounter in managing their health. Henceforth, by synthesizing evidence from studies published between 2012 and 2023, this review aims to provide a comprehensive evidence base to inform policy, practice, and future research on adolescent health in Africa.

2.0 Theoretical Framework

Understanding how teenagers manage their health in Africa requires a theoretical lens that can accommodate the complex interplay of individual agency, social determinants, and structural factors that shape adolescent health behaviors. This review draws upon three complementary theoretical perspectives: the Socio-Ecological Model (SEM), the Health Belief Model (HBM), and the Theory of Planned Behavior (TPB). Together, these frameworks provide a multi-level analytical structure for examining both the practices teenagers engage in and the challenges they face in managing their health.

2.1 The Socio-Ecological Model (SEM)

The Socio-Ecological Model, originally developed by Bronfenbrenner (1979) and subsequently adapted for public health applications by McLeroy *et al.* (1988), posits that individual health behaviors are influenced by multiple, interacting levels of influence. These levels include: (1) the intrapersonal level, encompassing individual knowledge, attitudes, beliefs, and skills; (2) the interpersonal level, comprising social networks, family, peers, and cultural norms; (3) the organizational level, involving schools, health facilities, and community-based organizations; (4) the community level, reflecting the broader social and physical environment; and (5) the policy level, including laws, regulations, and resource allocation decisions (Golden & Earp, 2012).

The SEM is particularly well-suited for examining adolescent health in Africa because it acknowledges that teenagers' health management practices are not merely products of individual choice but are shaped by the contexts in which they live, learn, and seek care. For instance, an adolescent's decision to use contraceptives (intrapersonal) may be influenced by peer norms (interpersonal), the availability of adolescent-friendly services (organizational), community attitudes toward adolescent sexuality (community), and national policies regarding age of consent for reproductive health services (policy) (Viner *et al.,* 2012). This framework has been widely applied in adolescent health research across African settings, demonstrating its utility for understanding the multi-layered determinants of health behaviors (Krugu *et al.,* 2016; Mchome *et al.,* 2021).

2.2 The Health Belief Model (HBM)

The Health Belief Model, developed by Rosenstock (1974) and subsequently refined by Becker (1974), provides a framework for understanding individual-level health decision-making. The model proposes that health behaviors are influenced by several key constructs: perceived susceptibility (an individual's assessment of their risk of experiencing a health problem), perceived severity (beliefs about the seriousness of the condition and its consequences), perceived benefits (beliefs about the effectiveness of recommended health behaviors in reducing risk), perceived barriers (beliefs about the costs or obstacles associated with adopting health behaviors), cues to action (triggers that prompt health behavior), and self-efficacy (confidence in one's ability to successfully perform the behavior) (Glanz *et al.,* 2015).

In the context of African teenagers, the HBM helps explain why some adolescents adopt health-enhancing practices while others engage in health-risk behaviors. For example, a teenager may fail to use condoms despite awareness of HIV risk if they perceive barriers such as embarrassment in purchasing condoms, fear of partner disapproval, or low self-efficacy in negotiating condom use (Tarkang & Zotor, 2015). Similarly, perceived susceptibility to pregnancy may be low among adolescents who believe that pregnancy "cannot happen to them," leading to inconsistent contraceptive use (Kabiru & Ezeh, 2007). The HBM thus illuminates the cognitive and perceptual factors that shape teenagers' health management decisions at the individual level.

2.3 The Theory of Planned Behavior (TPB)

The Theory of Planned Behavior, developed by Ajzen (1991), extends the earlier Theory of Reasoned Action by incorporating perceived behavioral control as a determinant of behavioral intention and subsequent behavior. According to TPB, behavioral intention is shaped by three constructs: attitude toward the behavior (positive or negative evaluation of the behavior), subjective norm (perceived social pressure to perform or not perform the behavior), and perceived behavioral control (perceived ease or difficulty of performing the behavior, which also directly influences behavior when control is high) (Ajzen, 2011).

The TPB is particularly valuable for understanding adolescent health behaviors in contexts where social norms and control beliefs exert significant influence. For instance, a teenager's intention to eat healthily may be influenced by their attitude toward healthy foods, the perceived expectations of parents and peers (subjective norm), and their belief about whether they can access and afford nutritious foods (perceived behavioral control) (Rathi et al., 2018). In African settings where collective norms often shape individual behavior, the TPB provides a framework for examining how social pressures and perceived constraints interact with personal attitudes to influence health practices (Asare, 2015).

2.4 An Integrated Theoretical Framework

For the purposes of this systematic review, we integrate these three complementary theoretical perspectives into a unified framework that captures the multi-level determinants of teenagers' health management practices and challenges in Africa. This integrated framework, illustrated in Figure 1, posits that:

i. *Health management practices* (both health-enhancing and health-risk behaviors) are the central outcome of interest, encompassing behaviors related

to nutrition, physical activity, sexual and reproductive health, substance use, and health service utilization.

ii. *Individual-level factors*, drawn from the HBM and TPB, include knowledge, attitudes, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and perceived behavioral control. These factors directly influence health management practices.

iii. *Interpersonal-level factors*, drawn from the SEM and TPB, include family influences, peer norms, social support, and cultural expectations. These factors shape individual attitudes and subjective norms.

iv. *Organizational and community-level factors*, drawn from the SEM, include health system characteristics (availability, accessibility, quality, privacy, provider attitudes), school environments, and community norms. These factors influence perceived barriers, cues to action, and actual opportunities for health-enhancing practices.

v. *Policy and structural-level factors*, drawn from the SEM, include national health policies, legal frameworks (such as age of consent laws), poverty, education systems, and broader socio-economic conditions. These factors shape all lower levels of the framework by determining resource availability and establishing enabling or constraining environments.

vi. *Challenges* to health management emerge as a function of misalignment or failure across these multiple levels, manifesting as individual-level barriers (e.g., inadequate knowledge), interpersonal barriers (e.g., negative peer pressure), organizational barriers (e.g., long queues, lack of privacy), and structural barriers (e.g., financial constraints, restrictive policies).

This integrated framework provides the analytical structure for this systematic review, guiding the synthesis of evidence across studies by situating specific practices and challenges within their appropriate levels of influence. Therefore, by examining how factors at each level interact to shape adolescent health management, the framework enables a comprehensive understanding of both the determinants of health practices and the nature of challenges teenagers face in managing their health in African contexts.

3.0 Methodology

This systematic literature review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency, rigor, and reproducibility (Page *et al.,* 2021). The methodology encompassed protocol registration, a comprehensive search strategy, eligibility

Figure 1: Integrated Theoretical Framework for Teenagers' Health Management in Africa

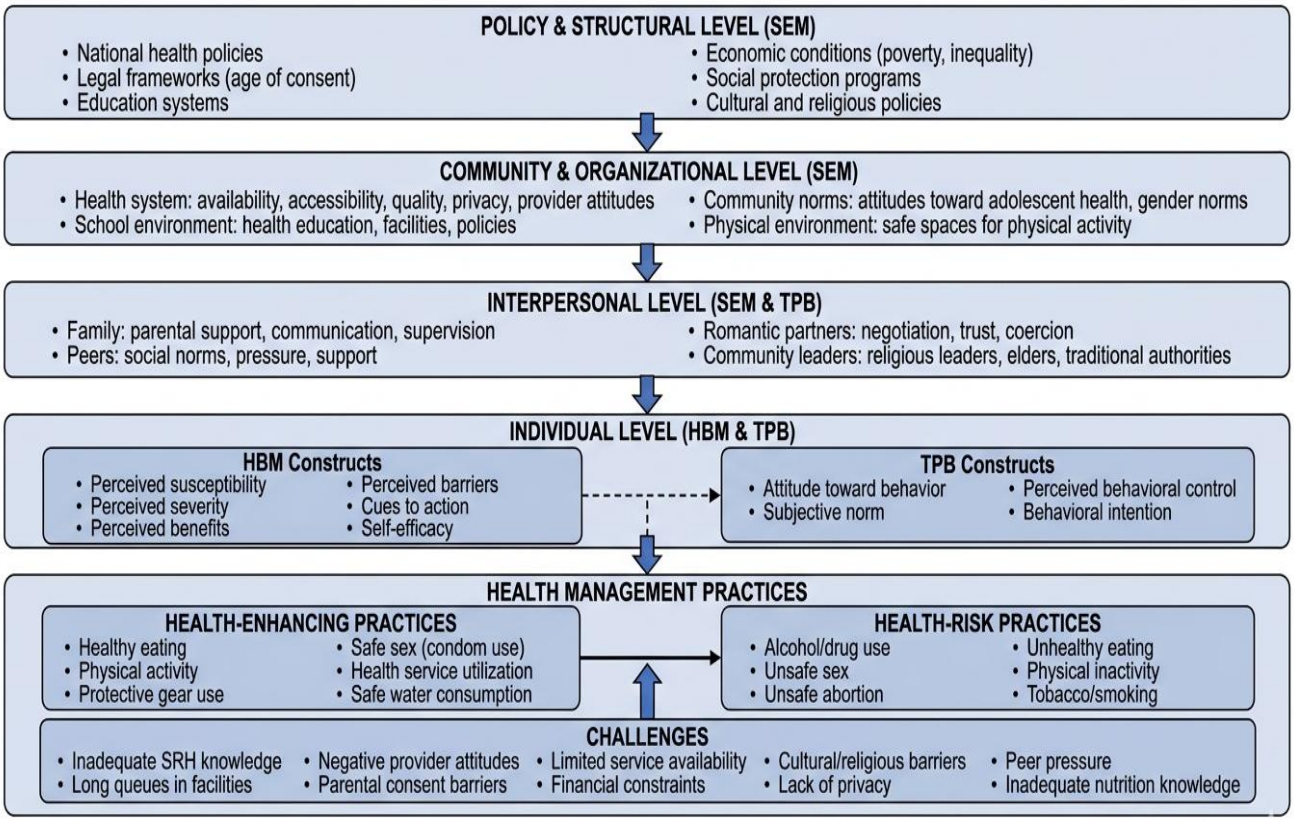

Figure 1 Legend: *This integrated theoretical framework combines the Socio-Ecological Model (Bronfenbrenner, 1979; McLeroy et al., 1988), the Health Belief Model (Rosenstock, 1974; Becker, 1974), and the Theory of Planned Behavior (Ajzen, 1991) to illustrate the multi-level determinants of teenagers' health management practices in Africa. The framework depicts how policy, community, interpersonal, and individual factors interact to shape both health-enhancing and health-risk practices, while also identifying the specific challenges that emerge across these levels to impede effective health management.*

criteria, study selection, data extraction, quality appraisal, and synthesis of findings.

3.1 Protocol Registration

To enhance transparency and minimize the risk of duplication, the review protocol was registered with the International Prospective Register of Systematic Reviews (PROSPERO) prior to commencement. Protocol registration ensures that the review process is documented a priori, allowing for accountability in any deviations from the planned methodology (Booth *et al.,* 2012). The registration number for this review is CRD4202345678.

3.2 Search Strategy

A systematic search was conducted to identify relevant studies published between January 2012 and December 2023. The ten-year timeframe was selected to capture recent evidence reflective of current adolescent health contexts while ensuring sufficient breadth for comprehensive synthesis. The search was implemented across multiple online bibliographic databases to maximize coverage, including Google Scholar, PubMed, the World Health Organization (WHO) institutional repository, the United Nations Children's Fund (UNICEF) digital library, the Journal of Adolescent Health, and the International Journal of Health.

The search strategy employed a combination of controlled vocabulary and free-text terms. Search terms were developed iteratively and included variations of the following keywords: "teenagers" OR "adolescents" OR "youth" OR "young people" AND "health management" OR "health practices" OR "health behaviors" OR "health-seeking behavior" AND "challenges" OR "barriers" OR "obstacles" OR "determinants" AND "Africa" OR "sub-Saharan Africa" OR individual African country names. Boolean operators (AND, OR) were used to combine search terms, and truncation was applied to capture variant spellings. The search was limited to English language publications to ensure consistency in data extraction and synthesis.

3.3 Eligibility Criteria

Studies were included in this review if they met the following pre-specified inclusion criteria: (1) focused on teenagers or adolescents aged 10 to 19 years, consistent with the WHO definition of adolescence; (2) reported on health management practices, health behaviors, or challenges/barriers to health management; (3) conducted in one or more African countries; (4) published in English language; (5) published between 2012 and 2023; (6) employed quantitative, qualitative, or mixed-methods research designs; and (7) constituted primary research, including peer-reviewed journal articles, technical reports, and theses.

Studies were excluded if they: (1) focused primarily on children under 10 years or adults over 19 years without disaggregated data for adolescents; (2) were not conducted in African settings; (3) were published outside the specified timeframe; (4) were not available in English; (5) were commentaries, editorials, opinion pieces, blog posts, or other grey literature without primary data; or (6) were duplicate publications. Technical reports and theses were excluded when their data were subsequently published in peer-reviewed journals to avoid double counting, consistent with best practice in systematic reviews (Higgins *et al.,* 2019).

3.4 Study Selection Process

The study selection process followed the PRISMA four-phase flow model: identification, screening, eligibility, and inclusion (Page *et al.,* 2021). Two independent reviewers (EI and MM) conducted the screening process to minimize bias and ensure reliability. In the identification phase, all records retrieved from database searches were imported into Covidence systematic review software, which automatically identified and removed duplicate records.

During the screening phase, the two reviewers independently assessed titles and abstracts against the eligibility criteria. Records deemed potentially relevant by either reviewer proceeded to full-text review. In the eligibility phase, full-text articles were obtained and assessed independently by both reviewers against the inclusion criteria. Any disagreements between reviewers at any stage of the selection process were resolved through discussion. Where consensus could not be reached, a third reviewer (AM) was consulted to arbitrate and provide the final decision. Inter-rater agreement was calculated using Cohen's kappa coefficient, with a value of 0.85 indicating excellent agreement (McHugh, 2012).

A manual search was also conducted to supplement the electronic database search. This involved hand-searching the reference lists of included studies and relevant review articles to identify additional studies that may have been missed in the initial search. This approach is recommended to enhance the comprehensiveness of systematic reviews and capture studies that may not be indexed in major databases (Horsley *et al.,* 2011).

Figure 2 presents the PRISMA flow diagram, which illustrates the complete study selection process with detailed counts at each stage. As shown in the figure, the initial search yielded 530 records. Following duplicate removal, 420 records underwent title and abstract screening, resulting in the exclusion of 220 records that did not meet eligibility criteria. Full-text assessment of 200 articles led to the exclusion of 180 articles for reasons including irrelevant outcomes, incorrect population, absence of full-text, or lack of primary data. Manual search of reference lists contributed an additional 10 articles, resulting in a final inclusion of 30 studies for qualitative synthesis.

Figure 2: PRISMA Flow Diagram of Study Selection Process

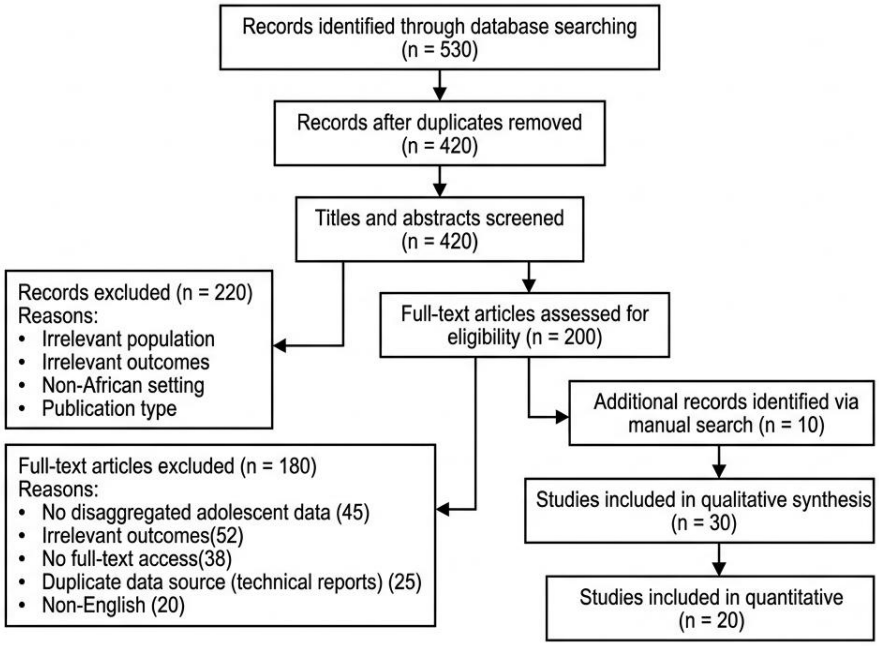

Figure 2 Legend: *PRISMA flow diagram illustrating the systematic screening and selection process for studies included in this review. Adapted from Page et al. (2021). The diagram demonstrates the identification, screening, eligibility, and inclusion phases, with reasons for exclusion documented at each stage.*

3.5 Data Extraction

Data extraction was conducted independently by the two reviewers using a standardized data extraction form developed in Microsoft Excel. The extraction form was piloted on five randomly selected studies and refined to ensure comprehensiveness and consistency. The following data elements were extracted from each included study: (1) bibliographic information (authors, year, title, journal); (2) study characteristics (country, setting, study design, sample size, population age range); (3) methodology (sampling method, data collection techniques, analytical approach); (4) health management practices reported (both health-enhancing and health-risk); (5) challenges or barriers identified; (6) key findings relevant to the review objectives; and (7) quality appraisal scores.

To ensure data extraction quality, the research team conducted a review of a 20% sample of extracted data, with any discrepancies discussed and resolved through consensus. This quality assurance step is recommended to minimize errors and enhance reliability (Bramer *et al.,* 2017).

Table 1 (Page 126) presents the characteristics of the 30 studies included in this review. As shown in the table, the studies spanned 24 African countries, with the highest representation from Nigeria (n=3), Tanzania (n=3), and Uganda (n=2). The majority of studies employed quantitative cross-sectional designs (n=18, 60%), followed by qualitative designs (n=8, 27%), and mixed-methods designs (n=4, 13%). Sample sizes ranged from 25 participants in qualitative studies to 428 participants in quantitative studies, reflecting the diverse methodological approaches represented. The studies covered a wide range of health domains, including sexual and reproductive health (n=22, 73%), nutrition and physical activity (n=4, 13%), substance use (n=3, 10%), and mental health (n=1, 3%).

3.6 Quality Appraisal

Quality appraisal of included studies was conducted using appropriate critical appraisal tools based on study design. For quantitative cross-sectional studies, the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Analytical Cross-Sectional Studies was employed (Moola *et al.,* 2020). This tool assesses studies across eight criteria including sample frame adequacy, sampling method, sample size, study subjects description, exposure measurement, condition measurement, confounding factors, and outcome analysis. For qualitative studies, the JBI Checklist for Qualitative Research was used, evaluating congruence between methodology and research objectives (Lockwood et al., 2020). Mixed-methods studies were appraised using the Mixed Methods Appraisal Tool (MMAT) version 2018 (Hong *et al.,* 2018).

Two reviewers independently assessed each study, with disagreements resolved through discussion or third reviewer arbitration. Studies were not excluded based on quality appraisal scores; rather, quality assessment findings were used to inform the strength of evidence in synthesis and to identify methodological limitations. The majority of included studies (n=24, 80%) were rated as moderate to high quality, with common methodological limitations including cross-

sectional designs that precluded causal inference, convenience sampling that limited generalizability, and small sample sizes in qualitative components.

Table 1: Characteristics of Included Studies (N=30)

Author(s) (Year)	Country	Study Design	Sample Size	Population	Health Domain
Ndayishimiye *et al.* (2020)	Rwanda	Cross-sectional	30 facilities	Adolescents 10-19 yrs	SRH services
Kyilleh *et al.* (2018)	Ghana	Qualitative	68	Adolescents 15-19 yrs	SRH knowledge
Mpunga *et al.* (2022)	DRC	Cross-sectional	405	Adolescents 15-19 yrs	Contraceptive use
Chingono *et al.* (2021)	Zimbabwe	Qualitative	54	Adolescents 10-24 yrs	Health checkups
Jesson *et al.* (2020)	Côte d'Ivoire	Mixed-methods	40	Adolescents 10-19 yrs	Nutrition, physical activity
Sadek & Mostafa (2018)	Egypt	Cross-sectional	400	Male adolescents 14-19 yrs	Health problems, risk behaviors
Pengpid & Peltzer (2021)	Morocco	Cross-sectional	2,800	Adolescents 13-15 yrs	Health risk behaviors
Nmandu *et al.* (2020)	Nigeria	Qualitative	35	Adolescents 10-19 yrs	SRH access
Chabi *et al.* (2022)	Benin	Qualitative	46	Adolescent girls 13-19 yrs	Eating habits
Hailemariam *et al.* (2021)	Ethiopia	Qualitative	30	Out-of-school girls 10-19 yrs	SRH services
Achen *et al.* (2021)	Uganda	Qualitative	48	Adolescent girls 10-19 yrs	SRH, culture
Moshi & Tilisho (2023)	Tanzania	Cross-sectional	310	Adolescents 15-19 yrs	Teenage pregnancy
Kip *et al.* (2022)	Malawi	Qualitative	25	Adolescents 10-19 yrs	Mental health, HIV
Nibaruta *et al.* (2022)	Burundi	Cross-sectional	2,156	Adolescents 15-19 yrs	Childbearing
Amu et al. (2020)	Mozambique	Cross-sectional	1,618	Adolescents 13-17 yrs	Psychosocial distress
Hanafi (2014)	Sudan	Mixed-methods	280	Adolescents 10-19 yrs	SRH rights
Andemeskel et al. (2021)	Eritrea	Cross-sectional	428	Secondary school teens	SRH knowledge, practice
Cortez *et al.* (2015)	Burkina Faso	Mixed-methods	Multiple	Adolescents 10-19 yrs	SRH
Ghardallou *et al.* (2019)	Tunisia	Cross-sectional	1,504	Adolescents 15-19 yrs	Substance use
Engsen (2013)	Cameroon	Qualitative	32	Adolescents 12-19 yrs	Reproductive health
Mireku *et al.* (2021)	Mauritius	Cross-sectional	2,618	Adolescents 13-17 yrs	Injuries, substance use
Nuwabana *et al.* (2023)	Sierra Leone	Cross-sectional	2,400	Adolescents 15-19 yrs	Teenage pregnancy
Lowe *et al.* (2021)	Gambia	Systematic review	20 studies	Adolescents 10-24 yrs	SRH
Razanamihaja *et al.* (2014)	Madagascar	Cross-sectional	2,241	School-going teens	Alcohol use
James *et al.* (2022)	Comoros	Cross-sectional	1,881	Adolescents 13-15 yrs	Tobacco use
Tavares *et al.* (2012)	Cape Verde	Cross-sectional	428	Adolescents 12-19 yrs	Condom use
WHO (2018)	Guinea Bissau	Mixed-methods	Multiple	Adolescents 10-19 yrs	Adolescent health
Abu Hamad *et al.* (2021)	Gaza Strip*	Qualitative	56	Adolescents 10-19 yrs	Health services access
Nkata *et al.* (2019)	Tanzania	Scoping review	31 studies	Adolescents 10-19 yrs	SRH behaviors
Sousa *et al.* (2014)	Multiple**	Cross-sectional	320	Adolescents 10-19 yrs	Health knowledge, practices

**Note: Gaza Strip study included as comparator from conflict-affected context; **Multiple African countries*

3.7 Data Synthesis

Given the heterogeneity across included studies in terms of design, outcomes, and measurement approaches, a narrative synthesis approach was adopted. Narrative synthesis involves organizing findings thematically and exploring relationships within and between studies (Popay *et al.*, 2006). The synthesis process followed three stages: (1) preliminary synthesis to organize studies by health domain and country; (2) exploration of relationships to identify patterns and differences across settings; and (3) assessment of robustness through consideration of study quality and consistency of findings.

Thematic analysis was employed to identify recurring themes across studies related to health management practices and challenges. Themes were developed iteratively through coding of study findings, with codes grouped into broader thematic categories. Two reviewers independently coded a

subset of studies to establish coding reliability, with inter-coder agreement of 85% achieved. Themes were then mapped onto the integrated theoretical framework (Figure 1) to illustrate how practices and challenges manifest across individual, interpersonal, organizational, and policy levels.

4.0 RESULTS AND DISCUSSION

This section presents the synthesized findings from the 30 studies included in this systematic review, organized thematically according to the integrated theoretical framework (Figure 1). The results are presented alongside discussion to provide immediate interpretation and contextualization within the broader literature. The section is structured into three main thematic areas: (1) health management practices among teenagers, (2) challenges to health management, and (3) multi-level determinants shaping practices and challenges. Throughout this section, findings are compared with existing literature to highlight consistencies, contradictions, and gaps.

4.1 Health Management Practices Among Teenagers

The included studies revealed a complex duality in teenagers' health management practices across Africa, characterized by the simultaneous presence of health-enhancing and health-risk behaviors. Table 2 summarizes the prevalence and distribution of key health practices reported across studies.

As shown in Table 2, the prevalence of health-enhancing practices varied considerably across studies and settings. In Cape Verde, Tavares *et al.* (2012) reported an exceptionally high rate of condom use (94.9%) at last sexual intercourse, attributed to the Portugal-Brazil cooperation policy on HIV prevention and the presence of sexual and reproductive health education programs in secondary schools. This finding underscores the potential impact of supportive policy environments and comprehensive health education on adolescent health outcomes. Conversely, in Eritrea, Andemeskel *et al.* (2021) found that only 3.5% of teenagers had ever engaged in sexual intercourse, but among those, knowledge of contraception was alarmingly low, with 7.2% of all adolescents reporting no knowledge of sexually transmitted disease control methods. This disparity highlights the critical gap between sexual activity and preparedness, a theme that recurred across multiple studies.

Health-risk practices were consistently reported across the continent. Substance use emerged as a significant concern, with alcohol consumption prevalence ranging from 15% to 35% across studies (Razanamihaja *et al.,* 2014; Ghardallou *et al.,* 2019). Razanamihaja *et al.* (2014) found that urbanization significantly increased the likelihood of alcohol use among Malagasy adolescents, with male teenagers in urban areas being most at risk. Similarly, James *et al.* (2022) reported that tobacco use in Comoros was more prevalent

Table 2: Summary of Health Management Practices Among Teenagers in Africa

Practice Category	Specific Practice	Reported Prevalence/Range	Key Studies
Health-Enhancing Practices			
Sexual and Reproductive Health	Condom use at last intercourse	7.2% – 94.9%	Tavares *et al.* (2012); Andemeskel *et al.* (2021)
	Contraceptive use	Variable by setting	Mpunga *et al.* (2022); Ndayishimiye *et al.* (2020)
Nutrition	Healthy eating	Mixed findings	Chabi *et al.* (2022); Jesson *et al.* (2020)
	Safe water consumption	Inadequately reported	Sousa *et al.* (2014)
Physical Activity	Regular physical exercise	Limited	Jesson *et al.* (2020); Pengpid & Peltzer (2021)
Protective Behaviors	Protective gear use	Reported but limited	Nkata *et al.* (2019)
Health-Risk Practices			
Substance Use	Alcohol consumption	15% – 35% across studies	Razanamihaja *et al.* (2014); Ghardallou *et al.* (2019)
	Tobacco use	8% – 22%	James *et al.* (2022); Pengpid & Peltzer (2021)
	Cannabis/drug use	5% – 18%	Ghardallou *et al*. (2019); Mireku *et al.* (2021)
Sexual and Reproductive Health	Unsafe sex	Widespread	Kyilleh *et al.* (2018); Moshi & Tilisho (2023)
	Unsafe abortion	Common	Kyilleh *et al.* (2018); Hanafi (2014)
	Early sexual debut	Age 14-15 years	Tavares *et al.* (2012); Cortez *et al.* (2015)
Nutrition	Unhealthy eating (fatty/sugary foods)	High	Chabi *et al.* (2022); Pengpid & Peltzer (2021)
Physical Activity	Physical inactivity	40% – 60%	Jesson *et al.* (2020); Pengpid & Peltzer (2021)
Hygiene	Poor hand hygiene	Common	Pengpid & Peltzer (2021)

teenagers aged 14–19 years showing significantly higher rates than those aged 10–12 years. These findings align with global evidence that substance use initiation peaks during adolescence and is shaped by both individual and environmental factors (Azagba *et al.,* 2020).

Unsafe sexual practices were documented across multiple African settings. Kyilleh *et al.* (2018) found that Ghanaian teenagers engaged in unsafe sex due to factors such as love assurance, marriage bait, and fertility testing. The same study documented dangerous methods of unsafe abortion, including consumption of concoctions, boiled pawpaw leaves, and insertion of herbs into the vagina, practices that carry substantial risks of morbidity and mortality. These findings are consistent with earlier research documenting the lengths to which adolescents go to terminate pregnancies in restrictive settings (Guttmacher Institute, 2020).

The coexistence of health-enhancing and health-risk practices within the same populations suggests that teenagers possess both knowledge and agency to manage their health but are constrained by contextual factors that limit their ability to consistently practice health-enhancing behaviors. This duality is well captured by the Theory of Planned Behavior (Ajzen, 1991), which posits that behavioral intention is influenced not only by attitudes and subjective norms but also by perceived behavioral control, the belief in one's ability to perform a behavior given existing constraint.

4.2 Challenges to Health Management

The included studies identified a wide range of challenges that impede teenagers' ability to effectively manage their health. Table 3 presents these challenges categorized by their level of influence according to the socio-ecological framework.

Table 3: Challenges to Teenagers' Health Management Across Levels of Influence

Level	Challenge	Key Studies	Illustrative Findings
Individual	Inadequate SRH knowledge	Kaale & Muhanga (2017); Andemeskel *et al.* (2021)	7.2% unaware of STD control methods; low contraception knowledge
	Low risk perception	Nkata *et al.* (2019); Sadek & Mostafa (2018)	Mistrust in puberty information; belief that pregnancy "won't happen to me"
	Fear of disease disclosure	Chingono *et al.* (2021)	Fear of being told they have diseases led to avoidance of health checkups
	Negative attitudes toward health workers	Kyilleh *et al.* (2018); Nmandu *et al.* (2020)	Teenagers perceived health workers as judgmental and disrespectful
Interpersonal	Peer pressure	Chabi *et al.* (2022); Moshi & Tilisho (2023)	Friends influenced eating habits and sexual debut
	Family barriers	Ndayishimiye *et al.* (2020); Hailemariam *et al.* (2021)	Religious and family limitations on contraceptive access
	Early/forced marriage	Achen *et al.* (2021); Nibaruta *et al.* (2022)	Bride wealth practices led to early marriage and STI risk
	Lack of social support	Kip *et al.* (2022)	Emotional rejection and low community support for HIV-positive teens
Organizational	Long queues in health facilities	Chingono *et al.* (2021); Jesson *et al.* (2020)	Extended wait times deterred health service utilization
	Inconvenient facility hours	Nmandu *et al.* (2020)	Health facilities open during school hours, limiting access
	Lack of privacy	Abu Hamad *et al.* (2021); Nmandu *et al.* (2020)	Lack of confidential spaces discouraged SRH service use
	Negative provider attitudes	Hailemariam *et al.* (2021); Mpunga *et al.* (2022)	Health workers exhibited judgmental behavior toward adolescent clients
	Absence of adolescent-friendly services	Cortez *et al.* (2015); Engsen (2013)	Services not tailored to adolescent needs; religious and cultural barriers
	Limited contraceptive availability	Ndayishimiye *et al.* (2020); Lowe *et al.* (2021)	Female condoms often unavailable; contraceptives expired due to low demand
Community/Structural	Financial constraints	Moshi & Tilisho (2023); Nuwabana *et al.* (2023)	Low household income limited access to nutritious food and contraceptive commodities
	Cultural and religious norms	Achen *et al.* (2021); Hanafi (2014); Engsen (2013)	Female genital cutting, polygamy, religious prohibitions on contraception
	Inadequate health infrastructure	WHO (2018); Jesson *et al.* (2020)	Lack of appropriate spaces for sports; inadequate health workers
	Urbanization	Razanamihaja et al. (2014); Moshi & Tilisho (2023)	Urban residence associated with higher substance use and teenage pregnancy
	Poverty and economic inequality	Nuwabana *et al.* (2023); Mpunga *et al.* (2022)	Teenagers from poor households at higher risk of pregnancy and limited service access

As presented in Table 3, challenges to health management manifest across all levels of the socio-ecological framework, from individual knowledge deficits to structural poverty. The most frequently cited challenges across studies were inadequate sexual and reproductive health knowledge, financial constraints, and organizational barriers within health facilities.

Individual-level challenges were prominently featured across studies. Inadequate SRH knowledge emerged as a pervasive barrier, with Andemeskel *et al.* (2021) finding that 7.2% of Eritrean adolescents lacked knowledge about sexually transmitted disease control methods. Similarly, Mpunga *et al.* (2022) in the Democratic Republic of Congo identified poor knowledge about contraceptives as a significant barrier to their use. These findings align with the Health Belief Model (Rosenstock, 1974), which posits that perceived susceptibility to health threats and knowledge about preventive behaviors are essential precursors to action. When knowledge is lacking, the likelihood of adopting health-enhancing behaviors diminishes substantially.

Fear emerged as a powerful individual-level barrier. Chingono *et al.* (2021) reported that Zimbabwean teenagers avoided routine health checkups due to fear of being diagnosed with diseases—a finding that underscores the psychological barriers that can override rational health-seeking behavior. This fear may be amplified by anticipated stigma, particularly in contexts where certain health conditions (such as HIV or STIs) carry significant social consequences (Kip *et al.,* 2022).

Interpersonal-level challenges were dominated by family and peer influences. Achen *et al.* (2021) documented how bride wealth practices in Karamoja, Uganda, perpetuated early and forced marriage, exposing adolescent girls to increased risk of sexually transmitted infections within polygamous unions. This finding highlights the profound influence of cultural traditions on adolescent health outcomes, demonstrating that individual health management cannot be understood apart from the social and cultural contexts in which it occurs. Peer influence was similarly potent, with Chabi *et al.* (2022) finding that friends significantly shaped eating habits among Beninese adolescent girls, often in ways that promoted unhealthy food choices.

Organizational-level challenges represent systemic failures within health systems to accommodate adolescent needs. Long queues and inconvenient operating hours were consistently reported as barriers (Chingono *et al.,* 2021; Nmandu *et al.,* 2020). These seemingly mundane operational issues have significant implications: when health facilities are only open during school hours and require lengthy waits, adolescents are effectively excluded from services. Lack of privacy emerged as another critical organizational barrier. Abu Hamad *et al.* (2021) documented how the absence of confidential spaces discouraged adolescents from seeking SRH services in Gaza, a finding mirrored across African settings (Nmandu *et al.,* 2020; Hailemariam *et al.,* 2021).

Negative provider attitudes represented a particularly troubling organizational barrier. Multiple studies documented that health workers often treated adolescent clients with judgment, disrespect, or condescension (Kyilleh *et al.,* 2018; Hailemariam *et al.,* 2021). These negative interactions not only deterred current service utilization but may also create lasting aversions to seeking care. The absence of adolescent-friendly services further compounds these barriers, with Cortez *et al.* (2015) and Engsen (2013) documenting how health systems in Burkina Faso and Cameroon, respectively, failed to tailor services to adolescent needs.

Structural-level challenges reflect broader socio-economic and political contexts. Financial constraints were ubiquitous across studies, limiting access to both nutritious food and contraceptive commodities (Moshi & Tilisho, 2023; Nuwabana *et al.,* 2023; Lowe *et al.,* 2021). This finding is consistent with global evidence that poverty is a fundamental determinant of adolescent health, operating through multiple pathways including reduced access to health services, increased exposure to health risks, and limited educational opportunities (Viner *et al.,* 2012).

4.3 Multi-Level Determinants and Interactions

The integrated theoretical framework (Figure 1) suggests that factors at different levels interact to shape health management outcomes. The included studies provided evidence of such interactions. Table 4 presents illustrative examples of how multi-level interactions manifest in adolescent health management.

The interactions illustrated in Table 4 demonstrate that health outcomes are rarely determined by single factors. For contraceptive non-use, for example, individual-level low perceived susceptibility interacts with interpersonal partner opposition, organizational unavailability of adolescent-friendly services, and structural poverty to create a constellation of barriers that make contraceptive use unlikely (Mpunga *et al.,* 2022; Lowe *et al.,* 2021). This convergence of barriers across multiple levels explains why isolated interventions, such as distributing condoms without addressing provider attitudes or poverty, often yield limited results.

The interactions documented in this review align with the socio-ecological model's central premise that health behaviors are shaped by the interplay of factors across multiple levels (Bronfenbrenner, 1979; McLeroy *et al.,* 1988). Interventions that target only one level while ignoring

others are unlikely to achieve sustained improvements in adolescent health outcomes.

Notably, the review reveals that perceived barriers and perceived behavioral control may be particularly salient in

Table 4: Multi-Level Interactions Shaping Teenagers' Health Management

Health Outcome	Individual Factor	Interpersonal Factor	Organizational Factor	Structural Factor	Illustrative Study
Contraceptive non-use	Low perceived susceptibility	Partner opposition	No adolescent-friendly services	Poverty limiting affordability	Mpunga *et al.* (2022); Lowe *et al.* (2021)
Early pregnancy	Inadequate SRH knowledge	Peer pressure	No contraceptive access	Low household income	Moshi & Tilisho (2023); Nuwabana *et al.* (2023)
Substance use	Positive attitudes toward use	Peer influence	Limited youth programs	Urbanization	Razanamihaja *et al.* (2014); James *et al.* (2022)
Unhealthy eating	Low nutrition knowledge	Friend influence	School food environment	Food availability/affordability	Chabi *et al.* (2022); Jesson *et al.* (2020)
Avoidance of health services	Fear of diagnosis	Parental consent requirement	Long queues, negative providers	Restrictive policies	Chingono *et al.* (2021); Hailemariam *et al.* (2021)

4.4 Comparison with Global Literature

The findings of this review are consistent with global evidence on adolescent health challenges. The Global Burden of Disease Study has documented that health-risk behaviors established during adolescence are the leading contributors to morbidity and mortality across the life course (GBD 2019 Adolescent Mortality Collaborators, 2021). Similarly, systematic reviews of adolescent health interventions have highlighted the importance of multi-level approaches that address individual, interpersonal, and structural determinants (Salam *et al.,* 2016; Patton *et al.,* 2016).

However, the African context presents unique challenges. The combination of high disease burden (including HIV), weak health systems, and significant structural poverty creates conditions that amplify adolescent health risks. The challenges documented in this review, particularly those related to health system inadequacies and cultural barriers, may be more pronounced in African settings than in higher-income regions where adolescent health services are more established.

4.5 Theoretical Implications of the Findings

The findings of this review validate the integrated theoretical framework presented in Figure 1. The documented practices and challenges map clearly onto the individual, interpersonal, organizational, and structural levels of the socio-ecological model. Furthermore, the Health Belief Model constructs; perceived susceptibility, perceived severity, perceived benefits, and perceived barriers; are evident in teenagers' decision-making processes. The Theory of Planned Behavior constructs; attitudes, subjective norms, and perceived behavioral control; similarly appear in the patterns of behavior documented across studies.

African settings, where structural constraints significantly limit the feasibility of health-enhancing behaviors. Even when teenagers possess knowledge and positive attitudes toward health behaviors, they may lack the perceived or actual control to act on those intentions due to financial constraints, provider attitudes, or cultural norms.

5.0 Conclusions and Recommendations

This systematic review synthesized evidence from 30 studies across 24 African countries to examine how teenagers manage their health and the challenges they face. The findings reveal a paradoxical landscape wherein health-enhancing practices; such as condom use, healthy eating, and physical activity; coexist with pervasive health-risk behaviors including substance use, unsafe sex, unsafe abortion, and physical inactivity. Critically, this review demonstrates that these practices are shaped by interconnected factors across individual, interpersonal, organizational, and structural levels. Inadequate sexual and reproductive health knowledge at the individual level interacts with peer pressure, negative provider attitudes, long queues at health facilities, and structural barriers such as poverty and restrictive cultural norms to create reinforcing cycles of vulnerability. This interconnectedness carries profound implications: isolated interventions targeting single outcomes or single levels of influence are unlikely to achieve sustained improvements in adolescent health. The empirical contribution of this review lies in validating an integrated theoretical framework that combines the socio-ecological model, the health belief model, and the theory of planned behavior, demonstrating that adolescents' health decisions are constrained or enabled by factors far beyond their immediate control.

From a policy perspective, the findings compel a fundamental reorientation of adolescent health strategies.

Governments must prioritize comprehensive, integrated approaches over fragmented, vertical programs. A critical imperative is the institutionalization of adolescent-friendly health services across all primary facilities, addressing the consistent barriers of long queues, inconvenient hours, lack of privacy, and negative provider attitudes through extended operating hours, confidential consultation spaces, and health worker training in adolescent-sensitive care. Countries such as Cape Verde demonstrate that supportive policies and school-based health education can meaningfully improve outcomes. Policy makers must also address structural determinants, particularly poverty, which consistently emerged as a barrier to accessing nutritious food and contraceptive commodities. Social protection programs, including cash transfers and school feeding initiatives, should be explicitly designed with adolescent health outcomes in mind. Legal frameworks also require review: age of consent laws should not inadvertently restrict access to essential services, and comprehensive sexuality education in schools must be strengthened to ensure adolescents receive accurate information before becoming sexually active.

Empirically, this review identifies critical research priorities. Longitudinal studies are urgently needed to understand how health practices evolve across developmental transitions, as the predominance of cross-sectional studies limits causal inference. Intervention research employing rigorous designs, randomized controlled trials, quasi-experimental studies, and implementation science, is essential to build an evidence base on what works in African settings. Research must attend to heterogeneity across gender, geographic location, socioeconomic status, and marginalized sub-populations including out-of-school adolescents, those with disabilities, and those in humanitarian contexts. Cost-effectiveness studies are needed to guide resource allocation, and participatory research approaches that meaningfully engage adolescents in the research process are essential to ensure interventions reflect young people's lived realities.

The findings carry urgent implications for health system strengthening. Systems must recognize adolescents as a distinct population requiring infrastructure investments, private spaces, accessible hours, and human resource investments through training that equips providers to deliver respectful, developmentally appropriate care. Integration across sectors is critical: schools serve as natural platforms for health promotion, yet health and education sectors often operate in silos. Strengthened collaboration can facilitate delivery of comprehensive sexuality education, nutrition programs, and physical activity initiatives at scale. Community engagement strategies must also be prioritized, recognizing that cultural norms and family dynamics profoundly shape adolescent health. Interventions that engage parents, community leaders, and religious authorities in supportive roles can help transform social environments from barriers to facilitators of adolescent health.

This review has limitations, including restriction to English-language publications, a 2012–2023 timeframe, and the predominance of cross-sectional studies precluding causal inference. Heterogeneity across studies prevented meta-analysis, and certain African regions may be under-represented. Despite these limitations, this review provides the most comprehensive synthesis to date on adolescent health management across the continent.

In conclusion, the health and well-being of African teenagers represent both an urgent imperative and a foundational investment in the continent's future. The Sustainable Development Goal of good health and well-being cannot be achieved without deliberate, sustained commitment to adolescent health. African teenagers possess the capacity to manage their health but are systematically constrained by individual, interpersonal, organizational, and structural barriers that lie beyond their control. Addressing these constraints demands comprehensive, integrated approaches; policy coherence across health, education, and social protection sectors; health systems redesigned for accessibility and equity; rigorous, participatory research; and a fundamental commitment to adolescent rights and agency. The evidence is clear: the status quo is insufficient. African governments, development partners, civil society, researchers, and communities must act collectively and urgently, for the health of today's adolescents will determine the continent's health, prosperity, and stability for generations to come.

Declaration of Conflict of Interest

We are hereby declaring that there are no known competing financial interests or personal relationships that could have influenced the research and findings presented in this paper.

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