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THE DOUBLE BURDEN OF TEENAGE PREGNANCY AND ADOLESCENT HIV IN SOUTH AFRICA: A CONCEPTUAL ANALYSIS OF DETERMINANTS, INTERSECTIONS, AND DEVELOPMENTAL OUTCOMES

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ABSTRACT

Teenage pregnancy and adolescent HIV infection remain among the most significant public health and developmental challenges affecting young people in South Africa. Although considerable progress has been made in HIV prevention, treatment, and reproductive health services, adolescent girls and young women continue to experience disproportionately high rates of HIV infection and early pregnancy. These two phenomena are closely interconnected and are often driven by similar structural, socioeconomic, cultural, and behavioural factors. Existing research has largely examined adolescent HIV and teenage pregnancy as separate issues, despite growing evidence that they constitute a mutually reinforcing public health burden with overlapping determinants and consequences. This conceptual paper examines the relationship between teenage pregnancy and adolescent HIV in South Africa through a synthesis of existing theoretical and empirical literature. The paper explores the structural drivers underlying both phenomena, including poverty, gender inequality, educational disadvantage, limited access to sexual and reproductive health services, gender-based violence, and social norms. It further discusses the health, educational, psychosocial, and economic consequences associated with the coexistence of adolescent HIV and teenage pregnancy. Drawing on the Social Ecological Model, Social Determinants of Health Framework, and Intersectionality Theory, the paper develops a conceptual framework illustrating how multiple levels of vulnerability interact to shape adolescent reproductive health outcomes. The analysis argues that effective interventions require integrated and multisectoral approaches that simultaneously address HIV prevention, reproductive health, education, gender empowerment, and socioeconomic development. The paper contributes to the growing discourse on adolescent health by providing a comprehensive conceptual understanding

of the double burden of teenage pregnancy and adolescent HIV in South Africa and identifying directions for policy, practice, and future research.

1. INTRODUCTION

Adolescence represents a critical developmental stage characterized by significant biological, psychological, social, and emotional transitions (Sidamo et al., 2025, Beckwith et al., 2024). According to Sidamo et al. (2025), during this period, young people begin to establish identities, develop interpersonal relationships, and make decisions that influence their future health and wellbeing. While adolescence offers opportunities for growth and development, it is also associated with increased vulnerability to health risks, particularly those related to sexual and reproductive health (Hegde et al., 2022). Among the most pressing challenges confronting adolescents globally are HIV infection and teenage pregnancy, both of which continue to undermine health outcomes, educational attainment, and socioeconomic development (Hegde et al., 2022, Wilkins et al., 2022).

Globally, HIV remains a major public health concern despite substantial advances in prevention, treatment, and care (Murewanhema et al., 2022). Adolescents and young adults constitute a significant proportion of new HIV infections worldwide, with adolescent girls and young women bearing a disproportionate burden (Govender et al., 2023). Sub-Saharan Africa continues to account for most new HIV infections among young people, reflecting persistent structural inequalities, gender disparities, and limited access to comprehensive sexual and reproductive health services (Govender et al., 2023, Calabrese et al., 2023). HIV infection during adolescence can have long-term implications for physical health, mental wellbeing, educational progression, and future economic opportunities (Calabrese et al., 2023).

Alongside the HIV epidemic, teenage pregnancy remains a major global developmental challenge (Sabet et al., 2023). According to (Sabet et al., 2023), each year, millions of girls aged between 15 and 19 years become pregnant, with the highest rates occurring in low- and middle-income countries. Adolescent pregnancy is associated with numerous adverse outcomes, including maternal morbidity, neonatal complications, interrupted education, social exclusion, and increased vulnerability to poverty (Maheshwari et al., 2022, Karataşlı et al., 2019). The consequences extend beyond individual adolescents, affecting families, communities, and national development trajectories (Todhunter et al., 2022). As a result, reducing adolescent pregnancy remains a priority within global public health and development agendas.

South Africa occupies a unique position within these global challenges because it simultaneously experiences one of the largest HIV epidemics in the world and persistently high levels of adolescent pregnancy (Woldesenbet et al., 2021). Although the country has achieved notable progress in expanding antiretroviral therapy coverage and strengthening reproductive health services, adolescent girls and young women continue to face elevated risks of both HIV infection and unintended pregnancy (Groves et al., 2022). Numerous studies indicate that young women in South Africa are

significantly more likely to acquire HIV than their male counterparts, while rates of teenage pregnancy remain concerning across both urban and rural settings (Groves et al., 2022, Tabana et al., 2026).

The coexistence of adolescent HIV and teenage pregnancy reflects more than a simple overlap of two public health issues (Groves et al., 2022). Rather, these phenomena are interconnected through common determinants and mutually reinforcing pathways (Groves et al., 2022, Foster, 2025). According to Groves et al. (2022), factors such as poverty, educational disadvantage, gender inequality, sexual coercion, gender-based violence, limited contraceptive access, and inadequate sexual health knowledge simultaneously increase the risk of HIV infection and adolescent pregnancy. Furthermore, adolescents who become pregnant may face heightened vulnerability to HIV acquisition, while those living with HIV encounter additional reproductive health challenges, including risks related to pregnancy, childbirth, treatment adherence, and mother-to-child transmission (Wilkins et al., 2022, Malunga et al., 2023).

The interaction between adolescent HIV and teenage pregnancy creates what can be described as a "double burden" of vulnerability (Edström and Khan, 2009, Kabunga et al., 2024). This double burden extends beyond biomedical outcomes and encompasses broader social, economic, educational, and psychological dimensions. Adolescents affected by both HIV and pregnancy often experience stigma, discrimination, interrupted schooling, reduced employment opportunities, social isolation, and long-term economic hardship (Pentury et al., 2024, Jolle et al., 2022). These overlapping disadvantages contribute to cycles of inequality that persist across generations and undermine national efforts toward social and economic development (Groves et al., 2022).

Given the continuing prevalence of both adolescent HIV and teenage pregnancy in South Africa, there is a need for a conceptual synthesis that integrates existing knowledge and examines the interconnected pathways linking these phenomena (Rammela and Makhado, 2026). Understanding the shared determinants and overlapping consequences of HIV infection and teenage pregnancy is essential for designing effective interventions that address the broader context of adolescent vulnerability rather than isolated health outcomes (Rammela and Makhado, 2026, Duby et al., 2021).

South Africa continues to experience high rates of adolescent HIV infection and teenage pregnancy despite substantial investments in public health interventions, sexual and reproductive health programmes, and HIV prevention strategies (Lewis et al., 2022). These challenges remain particularly concentrated among adolescent girls and young women, who face multiple and intersecting vulnerabilities (Lewis et al., 2022, Rammela and Makhado, 2025). While both issues have received considerable research attention, they are often studied and addressed separately, resulting in fragmented knowledge and policy responses (Groves et al., 2022, Noutchie, 2024). Consequently, limited conceptual understanding exists regarding how common structural, socioeconomic, cultural, and behavioural factors simultaneously contribute to both HIV infection and teenage pregnancy (Noutchie, 2024). According to Rudgard et al. (2023), the absence of integrated conceptual

frameworks hinders the development of comprehensive interventions capable of addressing the root causes and overlapping consequences of these challenges. There is therefore a need to critically examine the interconnected nature of adolescent HIV and teenage pregnancy in South Africa and develop a conceptual understanding that can inform more holistic policy and programme responses. This conceptual paper aims to critically examine the interconnected relationship between teenage pregnancy and adolescent HIV in South Africa by exploring their shared determinants, overlapping vulnerabilities, and developmental consequences.

2. METHODS

This paper adopts a conceptual analysis and narrative review approach to examine the interconnected relationship between teenage pregnancy and adolescent HIV in South Africa. The study draws on the Social Determinants of Health Framework, the Social Ecological Model, and Intersectionality Theory to develop a conceptual understanding of how structural, institutional, community, interpersonal, and individual factors interact to shape adolescent reproductive health outcomes. Similar to previous conceptual analyses of adolescent health in South Africa, the study conceptualizes determinants across micro, meso, and macro levels while recognizing the influence of cross-cutting inequalities such as gender, poverty, race, geographic location, and social exclusion.

The conceptual framework developed for this study positions adolescent HIV infection and teenage pregnancy as mutually reinforcing outcomes arising from intersecting vulnerabilities operating at multiple levels of society. The framework recognizes that neither HIV infection nor teenage pregnancy can be understood solely through individual behaviour, but rather through broader social and structural conditions that influence adolescent decision-making, opportunities, and access to services.

Literature Identification Strategy

The paper is informed by multidisciplinary literature obtained from peer-reviewed journals, policy documents, government reports, international agency publications, and grey literature published between 2000 and 2025. Literature was identified through searches of Scopus, Web of Science, PubMed, Google Scholar, ScienceDirect, WHO databases, UNAIDS reports, UNICEF publications, and South African government repositories.

Search terms included combinations of:

- Adolescent HIV
- Teenage pregnancy
- Adolescent reproductive health
- Social determinants
- Gender inequality
- HIV vulnerability

- Adolescent girls and young women
- Sexual and reproductive health
- South Africa
- Poverty
- Educational outcomes
- Gender-based violence
- Intersectionality

The search process was iterative, allowing emerging themes from the literature to inform further searches and refinement of the conceptual framework.

Analytical Framework

Thematic analysis was used to identify recurring patterns and concepts across the literature. Findings were categorized into three interconnected levels:

Micro-Level Determinants

Individual, family, peer, and relationship factors.

Meso-Level Determinants

Institutional and organizational factors, including schools, healthcare facilities, community organizations, and social services.

Macro-Level Determinants

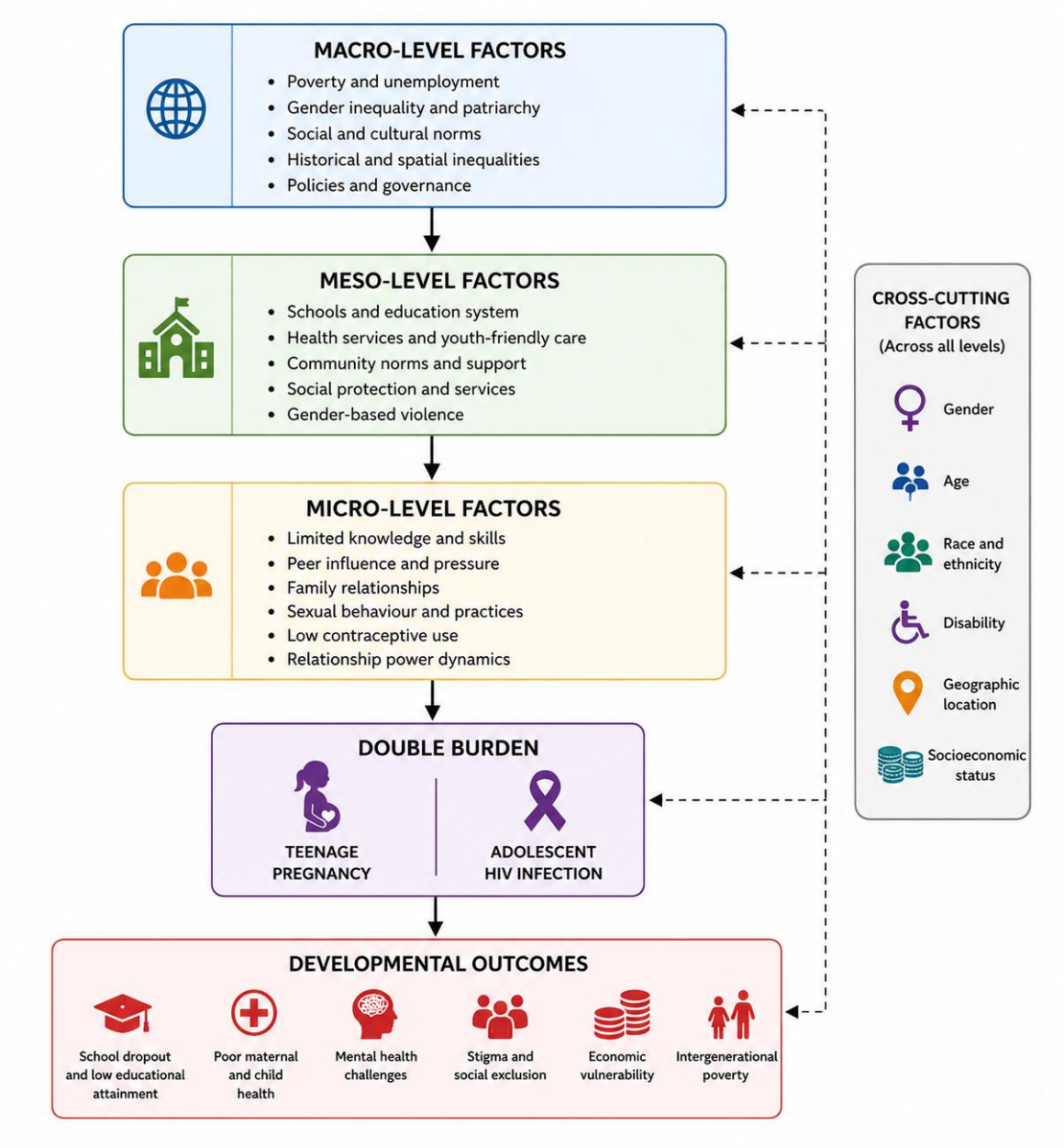
Structural factors such as poverty, inequality, labour markets, public policy, cultural norms, historical legacies, and gender systems.

Cross-cutting determinants such as gender inequality, race, class, disability, and geographic location were examined as factors that intersect across all levels of the framework.

3. Conceptual Findings

The Double Burden of Teenage Pregnancy and Adolescent HIV

The concept of a "double burden" refers to the simultaneous experience of adolescent HIV vulnerability and teenage pregnancy among young women in South Africa. Rather than occurring independently, these phenomena frequently emerge from common social, economic, and structural conditions. Adolescents who are vulnerable to HIV are often similarly vulnerable to unintended pregnancy, while pregnancy itself may increase HIV-related risks through reduced educational attainment, economic dependence, and exposure to risky sexual relationships.



The literature demonstrates that both outcomes are concentrated among adolescent girls living in contexts characterized by poverty, gender inequality, inadequate education, and limited access to youth-friendly health services. Consequently, teenage pregnancy and HIV should be viewed as interconnected manifestations of broader social vulnerabilities rather than separate public health problems.

3.1 Micro-Level Determinants

Gender Norms and Sexual Relationships

At the micro level, gender norms strongly influence adolescent sexual behaviour. Many young women enter relationships characterized by unequal power dynamics, limiting their ability to negotiate condom use, contraceptive use, or reproductive decisions. Traditional constructions of femininity

often promote passivity and compliance, while dominant forms of masculinity encourage sexual dominance and multiple partnerships.

These power imbalances increase the likelihood of both HIV acquisition and unintended pregnancy.

Knowledge and Sexual Health Literacy

Although HIV awareness is relatively widespread, comprehensive sexual and reproductive health knowledge remains uneven. Misconceptions about contraception, HIV prevention, fertility, and sexual relationships continue to influence adolescent decision-making.

Limited knowledge contributes to inconsistent contraceptive use, delayed health-seeking behaviour, and reduced utilization of prevention services.

Family and Peer Influences

Family communication plays a critical role in adolescent reproductive health outcomes. Adolescents who experience supportive parental communication regarding sexuality are generally more likely to delay sexual initiation and use contraception consistently.

Conversely, poor family support, family instability, and peer pressure may increase engagement in risky sexual behaviour.

3.2 Meso-Level Determinants

Educational Institutions

Schools represent important protective environments for adolescents. Educational attainment is consistently associated with lower HIV risk and reduced likelihood of teenage pregnancy.

However, schools can also reproduce inequalities. Pregnant learners often experience stigma, discrimination, and exclusion. School dropout frequently follows pregnancy, reducing future economic opportunities and increasing long-term vulnerability.

Furthermore, sexuality education programs often focus on risk avoidance without adequately addressing gender norms, power relations, and adolescent agency.

Table 1: Educational Pathways Linking HIV and Teenage Pregnancy.

Protective Factors	Risk Factors
School retention	School dropout
Comprehensive sexuality education	Inadequate sexuality education
Teacher support	Stigma and discrimination
Educational aspirations	Poor academic achievement

Health Services

Health facilities provide essential HIV prevention, testing, treatment, contraceptive, and maternal health services. However, adolescents frequently encounter barriers including:

- Judgmental attitudes from healthcare workers
- Confidentiality concerns

- Limited youth-friendly services
- Geographic barriers
- Financial constraints

These barriers discourage healthcare utilization and increase vulnerability to both HIV infection and unintended pregnancy.

Community Environment

Community-level influences include social norms, safety, violence, and economic opportunities. Communities characterized by high levels of violence and social disorganization often expose adolescents to greater reproductive health risks.

Gender-based violence is particularly significant because it simultaneously increases HIV vulnerability and unintended pregnancy risk.

3.3 Macro-Level Determinants

Poverty and Economic Inequality

Poverty remains one of the most significant structural determinants of adolescent HIV and teenage pregnancy in South Africa.

Economic deprivation may encourage transactional relationships, age-disparate partnerships, and dependence on older male partners who provide financial support. Such relationships frequently involve unequal power dynamics that reduce young women's ability to negotiate safer sexual practices.

Table 2: Shared Structural Determinants.

Determinant	HIV Risk	Pregnancy Risk
Poverty	High	High
Gender inequality	High	High
School dropout	High	High
Gender-based violence	High	High
Limited health services	High	High
Unemployment	Moderate	High

Gender Inequality

Gender inequality remains deeply embedded within South African society. Patriarchal norms shape expectations regarding sexuality, reproduction, relationships, and decision-making.

These norms contribute to:

- Early sexual initiation
- Sexual coercion
- Limited reproductive autonomy

- Reduced contraceptive negotiation
- Increased HIV exposure

Historical and Spatial Inequalities

The legacy of apartheid continues to shape access to education, healthcare, employment, and housing. Communities historically marginalized under apartheid frequently experience:

- Poor infrastructure
- Limited health facilities
- High unemployment
- Reduced educational quality

These structural inequalities contribute significantly to adolescent reproductive health disparities.

5. DISCUSSION

This conceptual analysis demonstrates that teenage pregnancy and adolescent HIV are deeply interconnected public health challenges that share common structural, social, economic, and behavioural determinants. Rather than occurring as isolated phenomena, the two outcomes frequently emerge from the same contexts of vulnerability, particularly among adolescent girls and young women in South Africa. The findings suggest that high rates of adolescent HIV infection and teenage pregnancy are not merely the result of individual choices or risk behaviours but are strongly influenced by broader social conditions that shape adolescents' opportunities, access to resources, and ability to make informed reproductive health decisions. This perspective aligns with growing evidence that adolescent reproductive health outcomes are influenced by multiple interacting factors operating across individual, interpersonal, community, institutional, and societal levels (Rammela, (Organization, 2019 #729)2026 #721).

The Social Ecological Model provides a useful framework for understanding these complex interactions. At the individual level, factors such as limited sexual health knowledge, inconsistent contraceptive use, and risky sexual behaviours contribute to vulnerability. However, these behaviours are influenced by interpersonal relationships, family dynamics, peer pressure, school environments, healthcare accessibility, and broader social norms. The model therefore highlights that adolescent reproductive health outcomes cannot be adequately explained through individual behaviour alone. Instead, behaviours are embedded within larger social systems that either facilitate or constrain healthy choices. For example, adolescents living in communities characterized by poverty, violence, and limited educational opportunities may face greater challenges in accessing reproductive health information and services, thereby increasing their susceptibility to both HIV infection and unintended pregnancy (Bronfenbrenner, 1979; McLeroy et al., 1988).

The findings are also consistent with the Social Determinants of Health Framework, which emphasizes that health inequalities arise from unequal access to social, economic, and political

resources. In South Africa, persistent poverty, unemployment, educational disparities, and unequal access to healthcare continue to shape adolescent reproductive health outcomes. Many young women remain economically dependent on older male partners, increasing their vulnerability to transactional relationships, unequal power dynamics, and limited reproductive autonomy. Such circumstances reduce adolescents' ability to negotiate safer sexual practices, including condom use and contraceptive uptake, thereby simultaneously increasing the risks of HIV acquisition and teenage pregnancy. The continued influence of historical inequalities and socioeconomic exclusion further reinforces these vulnerabilities, particularly among adolescents living in under-resourced communities (Marmot et al., 2008; WHO, 2023).

Intersectionality Theory provides an additional lens through which the double burden of teenage pregnancy and adolescent HIV can be understood. The theory suggests that multiple social identities and forms of disadvantage interact to create unique experiences of vulnerability. In the South African context, adolescent girls often experience overlapping disadvantages associated with gender, age, poverty, race, and geographic location. These intersecting inequalities create conditions in which young women face increased exposure to gender-based violence, coercive relationships, educational disruption, and limited access to healthcare services. Consequently, the risks of both HIV infection and teenage pregnancy are not evenly distributed across the adolescent population but are concentrated among those experiencing multiple forms of social and economic marginalization. This finding underscores the importance of moving beyond single-factor explanations and recognizing the interconnected nature of adolescent vulnerability (Crenshaw, 1989; Collins & Bilge, 2020).

Furthermore, the analysis highlights the cyclical relationship between adolescent HIV and teenage pregnancy. Pregnancy during adolescence may increase vulnerability to HIV infection through school dropout, reduced economic opportunities, and dependence on sexual partners. Similarly, adolescents living with HIV may encounter additional reproductive health challenges, including stigma, treatment adherence difficulties, and increased risks during pregnancy and childbirth. These interactions contribute to a cycle of disadvantage that extends beyond immediate health outcomes and affects educational attainment, mental health, social inclusion, and long-term economic wellbeing. The coexistence of HIV and teenage pregnancy therefore represents a significant developmental challenge with implications for both individual wellbeing and broader societal development.

The findings have important implications for policy and practice. Interventions that focus exclusively on HIV prevention or teenage pregnancy prevention are unlikely to achieve sustainable outcomes because they fail to address the shared determinants underlying both conditions. Instead, integrated approaches are needed that simultaneously address sexual and reproductive health, HIV prevention, education, gender equality, economic empowerment, and social protection. Schools, healthcare systems, families, communities, and policymakers all have critical roles to play in creating supportive environments that enable adolescents to make informed decisions regarding their sexual and reproductive health. Strengthening youth-friendly healthcare services, expanding comprehensive

sexuality education, addressing gender-based violence, and reducing socioeconomic inequalities are particularly important strategies for reducing the double burden of adolescent HIV and teenage pregnancy.

Overall, this conceptual analysis reinforces the need for a holistic and multisectoral response to adolescent reproductive health challenges in South Africa. Addressing the root causes of vulnerability requires moving beyond individual-level interventions toward broader structural and social transformations that promote equity, empowerment, and access to opportunities. Such an approach is essential for improving adolescent health outcomes and advancing national and global development goals related to health, education, gender equality, and poverty reduction.

6. Policy Implications and Recommendations

The findings of this conceptual analysis suggest that addressing the double burden of teenage pregnancy and adolescent HIV in South Africa requires integrated, multisectoral interventions that target the social, economic, educational, and health-related determinants of adolescent vulnerability. Within the health sector, there is a need to expand adolescent-friendly sexual and reproductive health services that are accessible, confidential, and responsive to the unique needs of young people. Healthcare systems should strengthen integrated HIV prevention, testing, treatment, and reproductive health programmes to ensure that adolescents receive comprehensive care rather than fragmented services. Furthermore, improving access to modern contraceptive methods, HIV prevention interventions, pre-exposure prophylaxis (PrEP), and reproductive health information can contribute significantly to reducing both unintended pregnancies and HIV infections among adolescents.

Within the education sector, schools should play a more proactive role in promoting adolescent health and wellbeing. Comprehensive sexuality education programmes should be strengthened to provide accurate, age-appropriate, and culturally sensitive information on sexual and reproductive health, HIV prevention, healthy relationships, and gender equality. Educational institutions must also address stigma and discrimination directed toward pregnant learners and adolescents living with HIV, thereby creating supportive learning environments that encourage continued school participation. Efforts to improve school retention and educational attainment among vulnerable adolescents are essential, as education remains one of the most important protective factors against both HIV infection and teenage pregnancy.

Community-based interventions are equally important in addressing the social contexts that shape adolescent health outcomes. Communities should actively work to prevent and respond to gender-based violence, which remains a significant driver of both HIV vulnerability and unintended pregnancy among adolescent girls and young women. Community mentorship programmes can provide adolescents with positive role models, psychosocial support, and guidance on life skills and reproductive health decision-making. Additionally, parents and caregivers should be meaningfully

engaged in adolescent health promotion initiatives, as open communication and family support have been shown to improve sexual and reproductive health outcomes among young people.

At the structural level, broader socioeconomic interventions are required to address the root causes of adolescent vulnerability. Policies aimed at reducing youth poverty, unemployment, and economic inequality can help decrease adolescents' reliance on transactional and age-disparate relationships that often increase the risk of HIV infection and unintended pregnancy. Gender equality initiatives should be strengthened to challenge harmful social norms, promote women's empowerment, and improve reproductive autonomy among adolescent girls. Furthermore, expanding social protection programmes, including cash transfer initiatives, educational support schemes, and targeted assistance for vulnerable households, may help reduce socioeconomic barriers that contribute to poor reproductive health outcomes. Taken together, these recommendations highlight the need for coordinated and sustained action across multiple sectors to effectively address the interconnected challenges of teenage pregnancy and adolescent HIV in South Africa.

7. CONCLUSION

This conceptual analysis demonstrates that teenage pregnancy and adolescent HIV constitute a significant double burden affecting adolescent girls and young women in South Africa. The two phenomena are interconnected through shared social, economic, cultural, and structural determinants operating across micro, meso, and macro levels of society. Similar to broader analyses of adolescent health in South Africa, the findings highlight the importance of understanding how individual experiences are shaped by institutional environments and structural inequalities.

The study argues that effective responses require moving beyond isolated health interventions toward integrated strategies that address the underlying determinants of vulnerability. Poverty reduction, educational inclusion, gender transformation, adolescent-friendly healthcare, and social protection are essential components of such an approach. By conceptualizing adolescent HIV and teenage pregnancy as interconnected outcomes rather than separate public health challenges, the paper provides a framework for developing more comprehensive policies and interventions capable of improving adolescent health and advancing sustainable development in South Africa.

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