A scoping review of interventions to promote sexual health amongst young people in South Africa

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Declaration

I, Vongai Lee-Ann Mafongoya, declare that:

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2. This thesis has not been submitted for any degree or examination at any other university.
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This dissertation is dedicated to:

My loving and supportive family my dad -Prof, thank you for always believing in me and sharing a good laugh when I needed it. My mom who has always been a pillar of strength and my beloved three sisters for always taking care of me. I owe a huge amount of this achievement to you all.

Contents

List of Figures

List of Tables

List of Abbreviations

AGYW : Adolescent Girls and Young women

AIDS : Acquired Immuno-Deficiency Syndrome GBV : Gender-Based Violence

GDs : Group Discussions

HIV : Human Immunodeficiency Virus

HSSREC : Humanities and Social Sciences Research Ethics Committee

HTC :HIV Testing and Counselling

IDIs : In-Depth Interviews

IMARA-SA : Informed, Motivated, Aware and Responsible Adolescents and Adults – South Africa InTSHA : Interactive Transition Support for Adolescents Living with HIV

JBI : Joanna Briggs Institute

mHealth : Mobile Health

MMAT : Mixed Methods Appraisal Tool

NAFCI : National Adolescent Friendly Clinic Initiative

PCC : Population, Concept, Context

PCC : Population/Concept/Context

PrEP :Pre-Exposure Prophylaxis

PRISMA : ScR- PRISMA Extension for Scoping Reviews

SA : South Africa

SAA : Sub-Saharan Africa

SH : Sexual Health

SRH : Sexual and Reproductive Health

SRHR : Sexual and Reproductive Health Rights

STI : Sexually Transmitted Diseases

TARSC : Training and Research Support Centre

UNESCO : United National Educational, Scientific and Cultural Organization

WHO : World Health Organisation

YP : Young People

Operational Definitions

1. Young People

   The World Health Organization (2021) stated that 1 in 6 people are between the ages of 10-24. This particular age group is usually termed 'young people' (YP). The population includes children, adolescents, and young adults.

2. Sexual Health

   A state of physical, emotional, mental, and social well-being concerning sexuality. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences free of coercion, discrimination, and violence (World Health Organization, 2006).

3. Interventions

   Interventions can be grouped into two broad categories: (1) preventive interventions are those that prevent the disease from occurring and thus reduce the incidence (new cases) of disease, and

(2) therapeutic interventions are those that treat, mitigate, or postpone the effects of the disease, once it is under way, and thus reduce the case fatality rate or reduce the disability or morbidity associated with a disease. Some interventions may have both effects (Smith et al., 2015)."

Abstract

Background: For the past three decades, the emphasis and importance of ensuring that all individuals have the ability to attain the highest level of sexual and reproductive health and rights has been increasingly highlighted (WHO, 2024). Young people (YP) often engage in their most formative experiences regarding sex, sexuality, and relationships during their adolescent to early adult life. As YP engage in their sexual self-expression, sexual health promotion (SHP) can help them understand the skills and information they need regarding healthy and respectful sexual practices (Crocker et al., 2019).

Aim: This study aims to systematically identify, map, and synthesize existing interventions, strategies, and programs implemented in South Africa to promote positive sexual health outcomes among young people. It seeks to provide a comprehensive overview of these efforts to inform and support future policy, programming, and implementation decisions by key stakeholders.

Methods: A scoping review approach was utilized to investigate the available literature to assess and synthesize the information on programs, curricula, interventions, and policies regarding the promotion of SH amongst YP.

Results:This study focused on the outcome of 7 studies. The review of studies on sexual and reproductive health (SRH) interventions in South Africa reveals the effectiveness of various programs. The nformed, Motivated, Aware, and Responsible Adolescents and Adults – South Africa (IMARA-SA) intervention improved sexual health among adolescent girls and young women, while the InTSHA intervention enhanced HIV knowledge and confidence. The DREAMS Partnership and Auntie Stella programs have made progress in improving access to SRH information and services but face barriers like stigma and healthcare provider judgment. The legislative framework for SRH services in South Africa is progressive, but inconsistencies between criminal law and children's law, lack of clarity on new interventions, and subjectivity in assessing maturity for certain services are identified.

Conclusion:

The scoping review of sexual health interventions for young people in South Africa reveals promising strategies like the IMARA-SA program and InTSHA mHealth intervention. However, implementing these strategies remains a challenge. Key gaps include long-term evaluation, inclusivity of LGBTIQ+ youth, and addressing technological and cultural barriers. Privacy concerns are also a significant issue. Future research should focus on improving methodological quality, exploring innovative approaches, and ensuring cultural sensitivity.

Chapter 1: Introduction

Bailey et al. (2015) propose that globally, a high proportion of young people are not receiving the sexual health promotion services that they desperately need, defining sexual health in holistic terms to include emotional, physical, mental, and social well-being concerning sexuality. Making sure young people experience safe sexual health practices is a key public health concern (Brown et al., 2021). By targeting children before they engage in sexual activity, these initiatives can effectively intervene and contribute to the overall prevention efforts. Young People (YP) face challenges where a lack of information and knowledge on how to engage in sexual health practices that are well informed results in them suffering from social, mental, and physical consequences (Hensel et al., 2016). Evidently, recent literature indicates healthcare services are seldom specifically designed to meet this specific need, resulting in poor sexual health practices and low levels of health-seeking behaviours amongst YP.

Ramero-Sanchez et al. (2018) state that driven by newly emerging sexual desires, YP becomes experimental, often lacking in the emotional maturity essential for healthy sexual practices, leading them to be more likely to engage in "high-risk" sexual activity. Repercussions of poor sexual health are multifaceted, and current literature suggests interventions undertaken by YP are predominantly reactionary methods as opposed to preventative or precautionary mechanisms. The overlap between sexual health and mental health is poignant as an individual's overall well-being can deteriorate due to their dyadic interaction. The World Health Organization (WHO) (2015) emphasizes the importance of good mental health to the overall sexual health of YP. Poor mental health highly correlates to negative health outcomes encompassing poor sexual and reproductive health. Consequences of poor sexual health practices may have impending psychological ramifications, which include susceptibility to anxiety and depression in addition to other mental health conditions (Patel et al., 2007). Physical consequences of poor sexual health include illnesses caused by infections transmitted through sex, blood-borne viruses, and unwanted pregnancies. Hence, approaches for functional interventions need to be eclectic in that they can address the elaborate underpinnings towards a holistic manner of mitigating the effects of poor sexual health practices.

Programs that aim to raise awareness about sexual and reproductive health issues can have a significant impact on preventing residual mental health illnesses, unwanted pregnancies, further transmission of disease, minimizing drug resistance, the likelihood of reinfection, and risk reduction of contracting other sexually transmitted infections (STIs) (Vujovic et al., 2024). Attending to the positive dimensions of sexual health education for YP advances the accessibility of information and resources that can enable YP to experience pleasurable and fulfilling sexual lives (Bailey et al., 2015).

1.1 Rationale for the Study

Despite significant investments in sexual and reproductive health (SRH) in South Africa, young people, especially adolescent girls and young women (AGYW), continue to face disproportionate risks, including unintended pregnancies, Human Immunodeficiency Virus (HIV), Sexually Transmitted Diseases (STIs), and gender-based violence (GBV). In South Africa, particularly KwaZulu-Natal, the prevalence of HIV among female and male youth (ages 15-24 years) was 21.9% (Speizer, Xiong, Mandal, Makina-Zimaliran, Hattori & Durno, 2020). During the period 201-2021, the number of births to young teenagers aged 10 - 14 years increased by 48.7% (Barron, Subedar, Letsoko, Makua & Pillay, 2022).

Good sexual health practices highlight how a YP's sexual health is a function of complex and interconnecting psychological, social, and biological factors in their life (Brown et al., 2021). Multifaceted approaches are urgently needed for educational and health literacy programs to reach and educate YP on safe sexual health practices prior to their sexual debut (Galappaththi-Arachchige et al., 2018). Interventions must be evidence-based and carefully adapted to local contexts and cultures to ensure maximum effectiveness. As with other areas of public health, steps to promote good sexual health should be initiated from an early age to effectively enhance more favourable outcomes. The transition window between childhood and adulthood is critical, with significant changes from the beginning of puberty to sexual maturation possibly leading to health-related vulnerability.

Approaches to improve and safeguard sexual health can be found throughout a wide range of settings, including social welfare, reproductive health programs, primary health care, education, and youth programs. A multisectoral approach is most effective within all contexts and interventions that have made developments in sexual health outcomes frequently succeed due to various actions that are implemented simultaneously. Denno et al. (2015) write that through complementary actions across several key domains, such as education, society and culture, economics, health systems and laws, policies, and human rights, the best types of interventions can be offered in an integrated manner or implemented alongside each other.

This scoping review provided a relevant overview of identified programmatic approaches to promote SH in YP, presenting and identifying conceptual, contextual, and methodological gaps and effectiveness as yielded in the literature. Also, it proposed further research to address limitations due to external factors and adapt methods currently used to apply to the current contextual standpoint of YP.

1.2 Objective and aim of the Study

- Identify interventions, strategies, and programs implemented to promote sexual health for YP.

The study aims to systematically identify, summarize, and synthesize available evidence on interventions aimed at promoting sexual health among YP in South Africa. By doing so, it provides a comprehensive overview that can guide policymakers, government departments, organizations, and stakeholders in developing or adapting interventions to better meet the sexual and reproductive health needs of YP.

1.3 Research Questions

- What interventions are available that target young people in South Africa to promote their sexual health in the South African context?

1.4 Chapter Outline

The following chapters below will provide the structure of this research study:

Chapter 1: Introduction

This chapter offers a broad outline detailing the introduction, rationale for the research, and the problem formulation. Moreover, it expands on the research aim, objectives, and questions.

Chapter 2: Literature Review

This chapter reviews the literature and provides a broad overview and synthesis of the studies that have been published in line with the phenomenon being studied.

Chapter 3: Methodology

This chapter details the research methods, the methodology employed, and the study's location.

Chapter 4: Study Results

This chapter contains the data obtained from the reviewed articles, the descriptions of reviewed articles, and a detailed account of the outcomes.

Chapter 5: Discussion

This chapter consists of the themes extracted from data analysis of the reviewed articles.

Chapter 6: Limitations, Recommendations, Conclusions

The final chapter includes a cumulative summary of the research findings. Suggestions for recommendations and the limitations discovered are also presented here.

Chapter 2: Literature Review

2.1 Background

Francis et al. (2018) reported that there is a high burden of wider sexual health morbidity among YP. In South Africa, approximately 10% of 15-24 years olds had a curable STI, the incidence of teenage pregnancy was 6.4 %, and the majority of adolescent girls and young women only began to use contraceptives following their first pregnancy (Chimbindi et al., 2018). YP also account for two-thirds of people living with HIV in Sub-Saharan Africa, with South Africa contributing considerably towards these statistics. A study by the Human Sciences Research Council (2021) outlined that in SA, with the ongoing occurrence of new infections, particularly in older adolescents, it is clear that the pool of adolescents living with HIV is not decreasing over time and that awareness of HIV transmission and participation in HIV programs are not at an optimal level. Additionally, South Africa also has a high prevalence of sexual violence among adolescents and young women, with 33% having experienced sexual violence before the age of 18 (Morrison & Rushawn, 2015).

Although the number of new HIV infections has declined by 54% since 1996 in South Africa, the incidence remains the highest globally, with young women aged 15–24 accounting for 30% of these new infections (Harrison et al., 2025), with HIV/AIDS being the second leading cause of death among individuals aged 15–24 in South Africa. Other causative factors impacting high mortality rates in young people living in South Africa include Tuberculosis (TB), interpersonal violence, homicide, and injuries resulting from accidents. For instance, Sui et al. (2021) reported on a study conducted in the Western Cape, which revealed that 98.9% of adolescents had observed community violence, while 40.1% had personally experienced it. From October to December 2023, 285 children were killed in South Africa, marking an 11% decrease compared to the same period in 2022. However, violent assaults rose by nearly 12%. Available data indicates that road traffic accidents are the primary cause of injuries among young people in South Africa. Around 36% of child injury deaths result from road traffic incidents, and drivers aged 16-19 are considerably more likely to be involved in crashes than older drivers. Tuberculosis (TB) represents a significant health threat, particularly as a prominent cause of mortality in individuals under the age of 20. In 2020, 7% of the reported TB cases in children under 15 years old occurred in South Africa. Fatalities associated with TB can occur at various stages: prior to diagnosis, before the commencement of treatment, during the treatment process, or following the conclusion of therapy. While there has been a a notable decline in mortality rates among South African children and adolescents undergoing TB treatment, the figures remain alarming, with a reported 2% mortality rate in 2016 (Osman et al, 2021).

While global interventions to promote safe sex have successfully reduced HIV transmission among young people, adolescent pregnancy rates in developing countries continue to rise, unlike in developed nations. Each year, approximately 21 million adolescent girls aged 15–19 in developing countries become pregnant, with most of these pregnancies being unintended. The consequences of unintended pregnancies include increased depression, anxiety, and early school dropout, which can perpetuate poverty. Additionally, unintended pregnancies among HIV-positive young women significantly contribute to mother-to-child transmission of HIV (Jonas et al., 2022).

Exploring the complexities of contextual, social, and individual factors affecting YP in South Africa can strongly aid in the success of sexual health promotion interventions. South Africa’s policies, guidelines, and laws provide a rights-based and supportive framework for the delivery of reproductive and sexual health services (Chimbindi et al., 2018), and it is crucial to investigate what is currently known about these interventions and to what extent they achieve their intended purpose. This study aims to collate and report the findings on this subject matter to identify which interventions have been implemented to promote YP’s sexual health in South Africa.

2.2 Sexual Health Among Young People

It is important to note that sexual health goes beyond simply being free from sexually transmitted infections (STIs) (Brown et al, 2021). In the view of the World Health Organization (WHO) (2006), sexual health should be understood as experiencing sexual pleasure and respect, free from harm and exploitation. For Lathem-Cork et al. (2017), sexual health includes sexual development and reproductive well-being, the capacity to form and sustain meaningful relationships, an appreciation of one's own body, respectful interactions with people of all genders, and the expression of affection, love, and intimacy in alignment with one's values.

Adolescent sexual health is undoubtedly a global public health concern. Young people are particularly vulnerable to various sexual health challenges. These challenges include STIs such as chlamydia, HIV, and genital herpes that have a direct impact on sexual and reproductive health attributable to stigmatization, infertility, cancers as well as complications related to pregnancy (Engel, 2022). Mcharo et al. (2021) postulate that Sexual and Reproductive Health (SRH) among young adults in developing countries remains a significant public health issue. According to the 2024 World Health Organization (WHO) report, approximately one in twenty adolescents contracts a sexually transmitted infection (STI) each year. Globally, nearly 50% of new HIV infections occur among individuals aged 15-24, marking this group as particularly vulnerable. In Sub-Saharan Africa (SSA), HIV accounts for one in six adolescent deaths. In Tanzania, 45% of new HIV cases are reported among young adults, and fewer than half of individuals aged 15-24 are adequately informed about HIV/AIDS (Mahlu et al., 2013).

Young people are inevitably becoming sexually aware and active at increasingly younger ages. For instance, studies show that the average age of first sexual intercourse has declined from around 17 years in the early 1990s to approximately 15 years in recent years (Smith et al., 2020). This earlier onset of sexual experimentation raises concerns, as many adolescents may not fully grasp the consequences of their actions. The rising rates of sexually transmitted infections (STIs) and unplanned pregnancies among those aged 15 to 19 are significant health issues, highlighting the risks associated with early sexual activity (Lathem-Cork et al., 2017).

Teenage pregnancies outside of marriage are a significant issue in the Gambia, especially among adolescent girls. Currently, 18% of girls aged 15 to 19 are either already mothers or expecting their first child. Moreover, these pregnancies are a leading cause of unsafe abortions, which account for 13% of maternal deaths in the country (Lowe et al., 2021). In South Africa, young women aged 15 to 19 have less knowledge about contraception, greater unmet contraceptive needs, and a higher rate of unintended pregnancies compared to adults. The 2016 South African Demographic and Health Survey revealed that 16% of girls aged 15 to 19 had already started having children (Davids, Kredo & Mathews, 2020).

As observed by Smith et al. (2018), South African adolescents face a significant risk of HIV infection due to the psychosocial and biological changes they undergo during this developmental stage, compounded by the high HIV prevalence in their area. While HIV incidence and related deaths have decreased in other parts of sub-Saharan Africa, the number of HIV-related deaths among adolescents continues to rise.

Aaro et al. (2016) state that many South African women experience high levels of violence, with approximately 1 in 3 women reporting experiences of sexual assault and intimate partner violence. This violence, predominantly sexual, significantly increases the risk of HIV infection, as research indicates that women who experience intimate partner violence are 50% more likely to acquire HIV compared to those who do not (UNAIDS, 2020). These statistics underscore the urgent need for interventions that address both violence against women and the associated health risks. Adolescents frequently experience violence in their sexual relationships, especially during their first encounters, with 15% of high school students reporting assault by their partners. In the Western Cape, 40% of young adolescents in relationships have faced intimate partner violence, which is associated with earlier sexual activity and a greater likelihood of being coerced into sex compared to those who do not face such violence (WHO, 2024). Schools are also common sites for sexual assault of students.

The literature by Aaro et al. (2016) underscores the complexity of sexual health among young people, emphasizing that it involves more than the prevention of STIs. Sexual health encompasses a range of factors, including emotional and relational aspects, the capacity for pleasure and respect, and the ability to form healthy relationships. Adolescents are particularly vulnerable due to developmental changes and limited understanding of sexual health risks, leading to significant challenges such as high rates of STIs, unintended pregnancies, and exposure to violence.

Addressing these issues requires a multifaceted approach that includes improving sexual health education, increasing access to contraception, and addressing violence and stigma. Despite existing initiatives and guidelines aimed at promoting adolescent sexual health, implementation at the facility level remains a challenge, underscoring the need for continued efforts to create more accessible and youth-friendly health services.

2.3 Interventions to Promote Sexual Health Among Young People in South Africa

There are various interventions meant to address sexual health. Within the education sector, as observed by Haberland & Rogow (2015), the United National Educational, Scientific and Cultural Organization (UNESCO) has advocated for mandatory sex education within schools.

According to Reeves et al. (2016), sexual health education is crucial for young people to be able to make informed decisions about their bodies and relationships. Comprehensive sexual health education covers a range of topics, including anatomy and physiology (understanding the sexual and reproductive systems, sexual orientation, and gender identity); safe sex practices (information about contraception, STI prevention, and the importance of consent); healthy relationships (teaching about mutual respect, communication, and boundaries in relationships); sexual rights (educating about individual rights regarding consent and autonomy in sexual activities). Enhancing the empowerment of young people is widely acknowledged as a crucial approach to achieving their sexual and reproductive health and rights

(SRHR). This empowerment is defined as broadening choices and amplifying voices by changing power dynamics (Kakal et al., 2022). At the core of empowerment is agency, which refers to young people's "capacity to act purposefully, pursue goals, voice their opinions, influence decisions, and make choices without facing violence or retaliation (van Eerdewijk et al., 2017).

Adekola & Mavhandu-Mudzusi (2021) assert that certain social determinants can hinder the effectiveness of school-based sexuality education programmes in South Africa, particularly in rural areas. These factors include poverty, parental opinions, cultural norms, religion, substance abuse, and lack of access to sexual and reproductive health facilities and services. A study by Lambani (2015) as cited in Adekola & Mavhandu-Mudzusi (2021) found that 80% of pregnant teenagers in a rural South African district reported engaging in unprotected sex due to poverty. Parental resistance to essential messages of sexuality education presents a significant challenge to its effectiveness. Similarly, Pleaner et al. (2022) point out that South Africa faces high levels of poverty and unemployment. In the first quarter of 2021, 32.4% of the 10.2 million young people aged 15–24 were not employed, attending school, nor in training. As a result, some young people may seek financial or material benefits through transactional relationships with older partners, known locally as "sugar daddies" or "sugar mommies" and referred to as "blessers" and "blessees" in South Africa. The unequal power dynamics in these relationships often lead to gender-based violence (GBV) and subsequent consequences regarding compromised sexual practices. They can hinder young women's ability to negotiate condom use, increasing their risk of unintended pregnancies, sexually transmitted infections (STIs), and HIV.

Furthermore, Adekola & Mavhandu-Mudzusi (2021) noted that while parents are generally supportive of sexuality education that reflects their cultural values and beliefs, this support can lead teachers to modify the curriculum to avoid parental criticism, potentially omitting crucial content. Cultural norms and practices significantly impact the effectiveness of school-based sexuality education programs and adolescent sexual and reproductive health (SRH) outcomes. Cultural norms can incite moral panic, affecting the implementation of sexuality education within a community. Additionally, religious beliefs often shape socio-cultural norms and attitudes toward these programs, with some religious groups expressing distrust towards aspects of the curriculum such as contraception, gender diversity, and gender equality, which may conflict with their doctrines (Adekola & Mavhandu-Mudzusi, 2021).

One other intervention in South Africa is mobile sexual health services for adolescents. Smith et al. (2019) conducted a study evaluating the effectiveness of such a service in Cape Town, South Africa. Mobile services provide acceptable, accessible, and cost-effective health care tailored for youth, serving as a valuable entry point for HIV prevention and treatment among adolescents. The study's findings aligned with other research, showing high acceptance and use of mobile health services in underserved areas. The mobile clinic was widely regarded as efficient, confidential, friendly, easily accessible, and straightforward in its information. Although nearly all (96%) participants viewed the service as confidential, a small percentage (7%) expressed concern about being seen at the clinic. Despite this, the mobile clinic was notably perceived as confidential and private, and all but one participant was likely or very likely to recommend the mobile service to others.

A systematic review by Mark et al (2019), of adolescent-friendly services in sub-Saharan Africa highlighted a gap between the number of HIV-affected youths—whether at risk or living with HIV—and the interventions available to support them. Reviews from South Africa emphasize the importance of non-judgmental interactions and confidentiality in youth-friendly services. In response to this need, the National Adolescent Friendly Clinic Initiative (NAFCI) was established in South Africa between 1999 and 2006 to help clinics offer more adolescent-friendly services (Smith et al., 2018). The importance of confidentiality when accessing health services is also emphasized by Chetty-Makkan et al (2020), who opine that they evaluated young people's preferences for HIV testing in a peri-urban area of South Africa. It was evident that privacy and confidentiality were crucial for HIV testing. The youth preferred to undergo testing alone rather than with a friend and favored testing at home or in a clinic over testing at schools. Nevertheless, they desired parental support when deciding to get tested. Additionally, the youth appreciated monetary and non-monetary incentives, particularly food vouchers.

A study from the Higher Education HIV/AIDS Programme conducted between 2008 and 2009 found that the average HIV prevalence at South African universities was 3.4 percent (HEAIDS, 2010). University campuses are described as "sexualized environments where peer pressure to engage in sexual activity is apparent." While young people may have received some Life Orientation education and parental guidance on sexual health and relationship management at school, as many students at university level lack sufficient information and skills to navigate the more complex environment they encounter. Additionally, there appears to be few structured programs addressing sexual and reproductive health (SRH) at this level (van der Riet, Akhurst & Wilbraham, 2019).

Jonas et al. (2022) investigated the relationship between participating in a combination HIV prevention intervention and the use of condoms and/or other contraceptive methods among young women in six districts of South Africa. Adolescent girls who took part in the intervention were more likely to use contraceptives other than condoms and to use both condoms and another form of contraception at their most recent sexual encounter, compared to those who did not participate. However, this association was not observed among participants aged 20–24. These results suggest that combination HIV prevention interventions could enhance the use of condoms and other contraceptive methods among adolescent girls, potentially reducing unintended pregnancies.

Adolescents encounter various obstacles when trying to access sexual and reproductive health (SRH) services, particularly contraceptive services. In sub-Saharan Africa, there are significant unmet needs regarding contraception among young people. Key barriers include fear of stigma, feelings of shame and embarrassment, lack of privacy, negative provider attitudes, and insufficient knowledge about available services and contraceptive options. Additionally, providers may be judgmental and lack the necessary knowledge, skills, and training to address the specific needs of adolescents. In South Africa, numerous initiatives and programs aim to address these barriers and standardize adolescent and youth-friendly services. Government guidelines support this effort by stressing the need for accessible and acceptable services for young people. Despite these guidelines, implementing them at the facility level has proven difficult, and service provision often falls short of being youth-friendly (Pleaner et al., 2022).

The literature on interventions to promote sexual health among young people in South Africa reveals a range of approaches, each with its strengths and challenges. Critical interventions include school-based sexual health education, empowerment programs, mobile health services, youth-friendly clinics, and higher education initiatives. Few structured programs address sexual and reproductive health (SRH) in higher education settings, leaving students without sufficient resources to manage their sexual health effectively in a complex environment (Akhurst et al., 2019).

2.4 Present Gaps as Described in Literature

A significant gap in school-based sexual health education is the influence of cultural and religious norms that often lead to resistance from parents and communities. This resistance can result in omitting essential content from curricula, limiting the effectiveness of education programs (Adekola &

Mavhandu-Mudzusi, 2021). For instance, some cultural and religious groups may reject topics related to contraception, gender diversity, and sexual rights, which are crucial for comprehensive sexual health education. Socio-economic factors, such as poverty, can undermine the effectiveness of sexual health education. Lambani (2015) highlights that financial constraints often lead to risky sexual behaviors among teenagers, such as unprotected sex. These economic pressures are compounded by limited access to sexual health resources and services, especially in rural areas (Adekola & Mavhandu-Mudzusi, 2021).

These gaps suggest that sexual health education programs need to be more adaptable to local cultural and economic contexts. Programs must address the socio-economic barriers and work to overcome cultural and religious resistance to ensure that they provide comprehensive and relevant information to all young people.

While empowerment programs are recognized as crucial for improving sexual and reproductive health, challenges exist in scaling these programs and integrating them effectively into existing educational frameworks (Kakal et al., 2022; van Eerdewijk et al., 2017). There is a need for broader implementation strategies that ensure these programs reach diverse and marginalized groups. The effectiveness of empowerment programs often depends on broader systemic support, including adequate training for facilitators and support from local institutions. Without this support, the impact of empowerment initiatives can be limited (Bango et al., 2022).

Greater investment must be made in scaling and integrating these initiatives into existing systems to enhance the effectiveness of empowerment programs. Additionally, systemic support and training are crucial for ensuring that these programs achieve their intended impact. Despite the positive reception of mobile health services, concerns about visibility and stigma persist (Smith et al., 2019). A small percentage of young people expressed worries about being seen at mobile clinics, which may deter them from using these services. Ensuring privacy and addressing stigma are crucial for maximizing the effectiveness of mobile health interventions. While mobile health services are effective in underserved areas, there is a need for greater coverage and accessibility. Mobile clinics may not reach all areas where they are needed, and logistical challenges can impact their effectiveness. Expanding the reach and accessibility of these services is also essential for ensuring that they benefit all young people in need.

Implementing youth-friendly services, such as those promoted by the National Adolescent Friendly Clinic Initiative (NAFCI), has been inconsistent (Smith et al., 2018). Despite guidelines emphasizing non-judgmental interactions and confidentiality, many clinics still fall short of being youth-friendly. Improving the consistency of youth-friendly services requires better adherence to guidelines and more comprehensive training for healthcare providers. Ensuring that services are genuinely confidential and non-judgmental is essential for building trust and encouraging utilization among young people

There is a notable absence of structured sexual and reproductive health (SRH) programs at the university level (van der Riet, Akhurst, & Wilbraham, 2019). University students, who face complex sexual and social environments, often lack adequate resources and support to manage their sexual health effectively.University campuses present unique challenges, including peer pressure and a sexualized environment, which can impact students' sexual health behaviors. Existing programs may not adequately address these challenges (van der Riet et al., 2019).There is a need to develop and implement structured SRH programs at higher education institutions to address these gaps. These programs should be designed to address the specific challenges faced by university students and provide comprehensive support for managing sexual health in a complex environment incorporating the level of literacy, diversity of demographic groups, socioeconomic status of students and individual buy in for engagement with the students.

Key barriers to accessing contraceptive services among adolescents include fear of stigma, feelings of shame, lack of privacy, and negative provider attitudes (Pleaner et al., 2022). These barriers contribute to unmet needs for contraception and hinder effective service utilization. Addressing barriers ensures that services are youth-friendly and adequately address the needs of young people which is crucial for improving contraceptive use and reducing unintended pregnancies.

The literature highlights several critical gaps in interventions aimed at promoting sexual health among young people in South Africa. Addressing these gaps requires a multifaceted approach that includes improving sexual health education, enhancing empowerment programs, expanding mobile and youth-friendly health services, developing structured higher education programs, and overcoming barriers to accessing contraceptive services. By addressing these gaps, interventions can be more effective in promoting sexual health and addressing the diverse needs of young people in South Africa.

Chapter 3: Methodology

3.1 Research Design

A scoping review was utilized to conduct this study. Scoping reviews (SRs) provided a preliminary assessment of the potential size and scope of the available research literature to determine the nature and extent of research evidence (Grant & Booth, 2009). Peters et al. (2015) outlined that scoping reviews aimed to map and provide an overview of both unpublished and published literature within a given research field, with the goal of synthesizing and developing a comprehensive report on the data. Scoping reviews were particularly useful when investigating literature on topics that had not been extensively researched or that encompassed broad and complex issues (Mays et al., 2001). They contributed to mapping existing literature to determine whether a full systematic review would be feasible or relevant (Arksey & O'Malley, 2005). Munn et al. (2018) postulated that the data and knowledge retrieved from reviews could be synthesized and examined for key concepts, emerging themes, and practices within a given field.

The purpose of using a scoping review in this study was to identify the types of evidence available in the field, analyze that evidence, and identify existing gaps while also assessing the scientific rigour of the included studies. Within this methodology, the researcher evaluated the nature and scope of research carried out in the specific field, examined and described fundamental concepts, and highlighted existing gaps or trends in the literature (Levac et al., 2010). The scoping review was deemed appropriate for this study, as it provided a broad overview of programmatic approaches aimed at young people as a key strategy for promoting their sexual health in South Africa. Additionally, the researcher was able to encourage further research that addressed the current context and specific constructs relevant to young people in the South African setting.

3.2 Research Procedure

There are five main stages on how to undertake a scoping review as suggested by Levac et al. (2010), which are as follows: (1) Identify the research question; (2) Identify the relevant studies; (3) Select the studies to be used; (4) Chart the data; (5) Collate your information, and finally summarize and report results.

Step 1: Identifying the Research Question

Scoping reviews aim to answer clearly defined objectives and questions drawn from an overall topic. A clearly articulated research question was requisite as a rationale for undertaking the research study. Levac et al. (2010) suggest that for a systematic analysis of literature, research should involve a broad research question with a clearly defined objective, defining concepts, outlined population, and incorporation of context. The purpose and objective of the research need to be clearly outlined to inform the inquiry of literature in the collection stage. The research question guiding this study was "What evidence is available of interventions targeted at young people in South Africa as a chief strategy for the promotion of their sexual health in the South African context?". The researcher utilized the PCC (Population, Concept, and Context) framework to determine the guiding research question, thereby offering significant insights into the review's focus, scope, and applicability (Peters et al., 2015). The Population, Concept, and Context were the three defined elements established to provide direction in identifying what information should be incorporated in the question for this scoping review. For this study, PCC referred to three specific concepts: "P" to a population (young people), "C" to a concept (interventions to promote sexual health), and "C" to the context (South Africa).

Step 2: Identifying Relevant Studies

The goal of a scoping review is for it to be extensive in identifying existing studies that appropriately address the main research question (Arksey & O'Malley, 2005). Arksey & O'Malley (2005) further outlined a specific approach that entails exploring reference lists, key journals, existing networks, databases, electronic databases, conferences, and relevant organizations to access relevant research evidence. This study predominantly used electronic databases based on broad inclusion and exclusion criteria to identify studies. Inclusion and exclusion criteria ensure clear stipulations of what is relevant in each article. This criterion informs the relevance of the literature compiled. This guideline effectively reduces the risk of bias and promotes credibility and consistency in reviewing the findings. Studies that did not address the research questions were eliminated. Table 1 consists of the inclusion and exclusion criteria used for the review

Table 1. Eligibility Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Study Design	Mixed method, quantitative, qualitative study designs, systematic /scoping reviews	
	Full text	Studies not available in full-text
Population	Study samples of young people (age range 10-24 years)	Study samples of participants younger than 10 older than 24 years of age
Concept	Strategies, programs, and policies to promote sexual health	Nonsexual health-related interventions
Context	Studies which have been conducted within South Africa	Interventions conducted outside of South African borders
Language	Articles in English/ articles which were translated into English	Non-English translated/written articles
Time Period	Studies published within the last ten years (2013-2023)	Studies published prior to 2013

Electronic databases were the key source for identifying and collecting relevant studies and information for this study. The search strategy was developed from the research question and definitions of key concepts. The study also utilized reference lists and bibliographies of all studies to ensure other relevant literature was included in the scoping exercise (Lima et al., 2017). Literature searches were conducted via PubMed, EBSCOhost, PsycINFO, UKZN e-Journals, SAGE Journals, and SABINET Journals.

The selection of databases for this scoping review was guided by the aim to comprehensively capture peer-reviewed literature relevant to interventions promoting sexual health among young people in South Africa. The databases selected (PubMed, EBSCOhost, SABINET, PsycINFO, SAGE Journals, and the UKZN e-Journals A–Z List) were chosen based on their relevance, subject coverage, and accessibility to South African research outputs.

PubMed was included for its comprehensive coverage of biomedical and public health literature, which is essential for studies focusing on sexual and reproductive health. EBSCOhost provides access to a wide range of academic databases covering health, education, and social sciences, all of which intersect in youth sexual health interventions. SABINET is a South African-focused database, offering access to locally published research, theses, and policy papers, making it highly relevant for capturing context-specific interventions and grey literature. PsycINFO was selected for its specialized coverage of psychological and behavioral sciences literature, which is pertinent to understanding the psychosocial aspects of sexual health interventions. SAGE Journals includes peer-reviewed content from health, education, and social science disciplines, contributing a diverse set of perspectives on intervention research. The UKZN e-Journals A–Z List was utilized to maximize access to institutionally available resources and to identify additional journal articles that may not be indexed in traditional databases.

These databases were strategically chosen to ensure a balanced representation of global, regional, and local literature across multiple disciplines, thereby enhancing the comprehensiveness and contextual relevance of the scoping review.

3.3 Search Strategy

The researcher successfully identified unpublished and published articles that met the inclusion criteria for the study using a broad electronic search strategy (Peters et al., 2015). The search strategy for electronic databases was developed based on the research questions and key concepts. Studies published between 2013 and 2023 were selected. As recommended by the University of South Australia (2023), to assist researchers in identifying the main concepts outlined in the scoping review question,the Joanna Briggs Institute proposes using the PCC (Population/Concept/Context) framework. The PCC terms were used to identify studies relevant to the phenomena under review. Peters et al. (2020) write that a significant characteristic of participants relevant to a review's question and objectives is the 'population'; as such, the population for this scoping review was limited to young people aged 10- 24.

Additionally, Peters et al. (2020) state the core 'concept' is needed to guide the breadth and scope of the study to attend to this study's concept was similarly comprehensive, incorporating any intervention to address the promotion of sexual health for young people. Lastly, the 'context' addresses the specific setting where sources of evidence are collected. This scoping review included this guideline using the South African context. Utilizing this framework, the researcher developed a systematic search strategy breaking down the research question in this manner and assisted in the identification of any omissions in the inclusion and exclusion criteria. The primary search terms are illustrated in Table 2.

Table 2. Key Search Words using PCC elements

Population	**Concept**	**Context**
Adolescents	SH strategies	South Africa
Teenagers	SH programs SH policies	
Young adults		
Youth		
Young people		

The results were recorded, and references were sorted into separate folders using Endnote software. The researcher piloted the search engines to see whether the keywords and databases selected were suitable before a full implementation. Arksey and O'Malley (2005) outline that the piloting process allows for refinement, to check if technical search skills were available for assistance, and to estimate the potential costs of utilising electronic databases, interlibrary loans, and printing of full articles. Arksey and O'Malley (2005) outline that piloting the preliminary search is important to test if the keywords and databases proposed are suitable to yield information for the study, whether any technical searching skills are available to assist with the searches, and what the potential costs are of on-line access to electronic databases, inter-library loans and photocopying full articles that are available locally . The following search terms were combined to carry out an electronic literature search. For accuracy purposes search combinations were slightly reworked and included (sexual health programs or sexual health interventions or sexual health policies) AND (teenagers or adolescents or youth or young adults) AND (South Africa or South African). Table 3 indicates the results, which show that a considerable volume of literature is accessible for conducting a scoping study on this particular topic.

Table 3. Yields/Search Strategies for electronic databases (Accessed 21-22 April 2024)

Piloted Database	Yield	Total Relevant to Study
PubMed	60	5
EBSCOhost	343	17
SABINET	221	12
PsychINFO	427	14
SAGE Journals	202	9
UKZN e-Journals A-Z List	611	21
TOTAL YIELD	**1864**	**78**

Step 3: Study Selection

The study selection process was carried out in a structured and systematic manner, in line with the

PRISMA-ScR guidelines (Tricco et al., 2018), to ensure transparency and reproducibility. The process involved two key phases: (1) title and abstract screening and (2) full-text screening, with both phases guided by the predefined inclusion and exclusion criteria (outlined in Table 1).

All retrieved citations were imported into EndNote reference manager for organization and deduplication. Following this, the citations were transferred to a screening tool (e.g., Excel or a software like Rayyan, if used – please insert the actual tool used) for the review process.

Phase 1: Title and Abstract Screening

The first level of screening involved a review of titles and abstracts to assess their initial relevance to the research question. This phase was conducted independently by two reviewers to minimize bias and improve reliability. Each reviewer assessed whether the studies appeared to meet the inclusion criteria.

Discrepancies between reviewers were resolved through discussion, and where consensus could not be reached, a third reviewer was consulted. Inter-reviewer agreement at this phase was calculated using a simple percentage agreement, and agreement was reached in 85% of the initial decisions.

Phase 2: Full-Text Screening

Studies that passed the title and abstract phase were retrieved in full and screened against the inclusion and exclusion criteria to determine final eligibility. Again, two reviewers independently assessed each full-text article. Where judgments differed, discussions were held to reach a consensus, and a third reviewer mediated unresolved conflicts. This process ensured that studies included in the final review were thoroughly evaluated for methodological relevance and content alignment with the study objectives.

During this stage, particular attention was paid to the scope and depth of the interventions, target populations, and geographical focus within South Africa, which were not always evident in abstracts alone (Arksey & O'Malley, 2005). Therefore, reliance on full-text analysis was necessary for an accurate assessment of relevance.

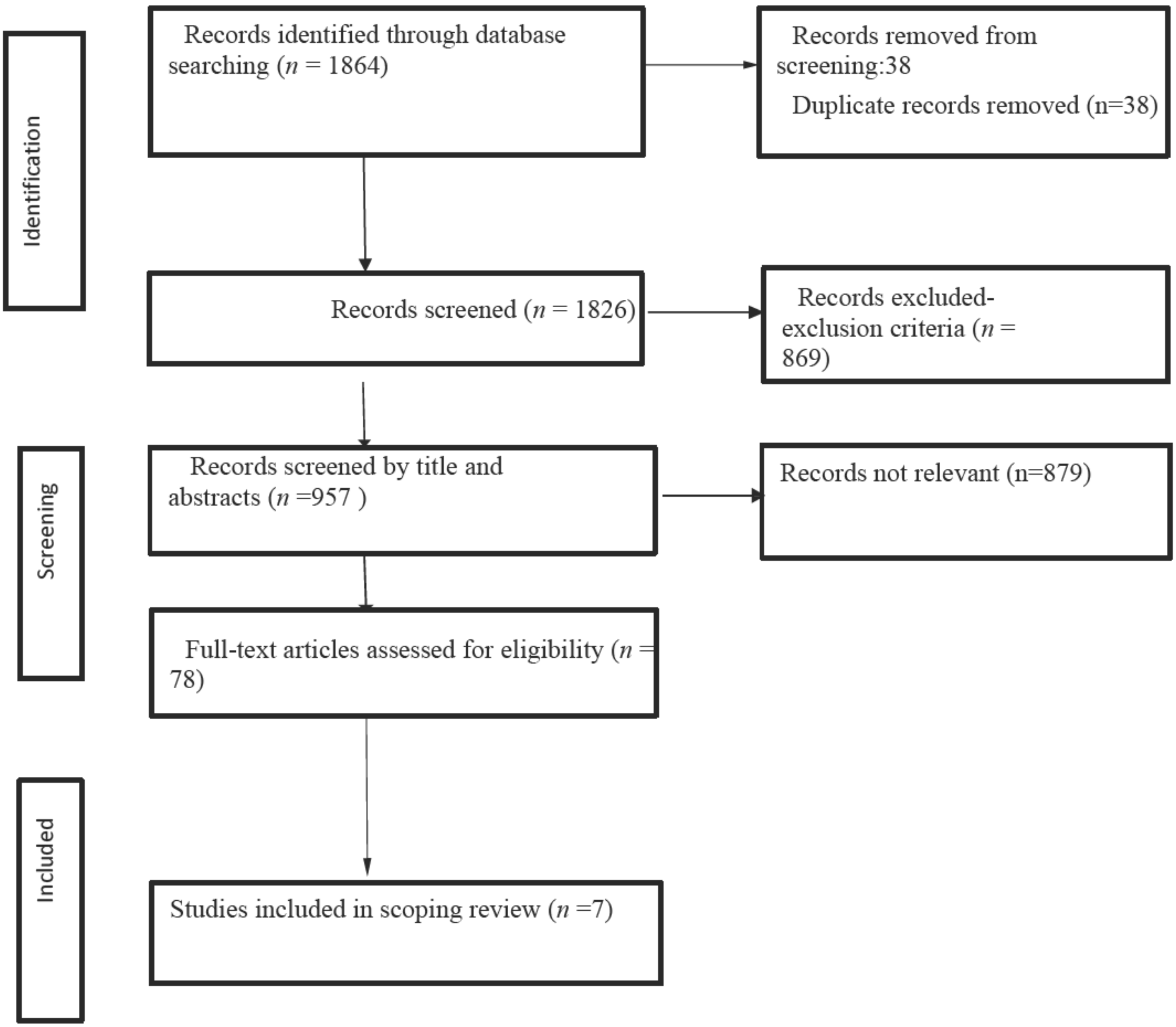
Reporting of Screening Results

Screening outcomes were recorded and reported using the PRISMA-ScR flow diagram, which details the number of records identified, screened, excluded (with reasons), and finally included in the review (see Figure 1). This provided a clear audit trail of the selection process and ensured methodological transparency.

Figure 1: PRISMA Flow Diagram for the Scoping Review Process

Figure 1

PRISMA Flow Diagram for the Scoping Review Process



One thousand eight hundred and sixty-four (1864) studies were initially identified through electronic database searches, of which 38 were duplicates. The records were further screened, and 869 articles were excluded, as guided by the study's exclusion criteria. Thereafter, the titles were screened, and following the title screening, an abstract screening was carried out, after which 879 articles were excluded. The full texts of 78 studies were assessed for eligibility, and of these studies, 71 were excluded. As a result, 7 articles were included for the charting of the data process.

The reasons for exclusion were as follows: wrong participant population (18), unrelated outcomes (23), use of measures that were not relevant to this study (12), The data collection year fell beyond the parameters set by the inclusion criteria (18), and inability to access the article in full text (3).

Stage 4: Charting the data

Data charting is a process that involves extracting relevant information from the articles that are suitable for review and proceeding to analyze and interpret it. Furthermore, the material is screened, charted, and categorized according to key themes (Sargeant & Connor, 2020). A narrative review approach guided the process of charting the data (Pawson, 2002). Parameters including the author(s), publication date, study location, study aims and objectives, population of the study, type of intervention, methodology, key findings and review will be included (Khalil et al., 2016). The charting of data is summarized in Table 4.

Table 4. Data Charting used in a narrative review approach (Pawson, 2002)

Author	Year of Publication	Aim & Objectives	Study Population	Methodology Type of intervention	Findings

Stage 5: Collating, Summarizing, and Reporting the Results

The fifth and final stage of the approach encompasses collating, summarizing, and reporting the results. This is done through a concise presentation of the reviewed studies. A thematic analysis of the data is conducted to offer a narrative interpretation of the existing literature, as outlined by Arksey and O'Malley (2005). An analytical framework or thematic structure is typically employed during this stage to provide a comprehensive summary (Colquhoun et al., 2014*)*. The literature collected is analysed thematically, and the results are reported clearly and consistently in a descriptive form. As described by Braun and Clarke (2006), thematic analyses are valuable qualitative research tools that enable researchers to provide a comprehensive, nuanced, and detailed account of the data. This approach proves beneficial in scoping reviews as it allows for a concise and precise reporting of the findings, illustrating their relevance to the overall research question and study purpose.

Levac et al. (2010) provide a comprehensive guide for researchers to execute step five of Arksey and O'Malley's (2005) five-stage approach. The three essential steps highlighted by the authors include conducting analysis, reporting the results, and reflecting on the significance of the findings in relation to the overall purpose of the study. Furthermore, the researchers emphasize the importance of discussing the implications for future research, practice, and policy. In accordance with these guidelines, the present study will employ a descriptive numerical summary and thematic content analysis to summarize the data. The study used thematic content analysis as the primary method of analyzing the included studies. This approach was selected because it is well-suited for scoping reviews that aim to synthesize heterogeneous data across various study designs, populations, and intervention types; While some aspects of the findings may appear descriptive (e.g., listing types of interventions or target groups), this descriptive mapping was guided and structured through thematic categories, allowing for deeper interpretive insight into how interventions were framed, implemented, and targeted. Therefore, the analysis went beyond simple description and involved categorization and synthesis of recurring patterns in the literature.

3.4 Quality Appraisal

As a component of the scoping review analysis, it was imperative to assess the quality of the methodology used through validation by a critical appraisal tool (Levac et al., 2010). The Mixed Methods Appraisal Tool (MMAT), used to critically appraise systematic reviews (Hong et al., 2018), was used for this study. The MMAT can appraise five types of study designs: qualitative, mixed methods, randomized controlled trial, nonrandomized, and quantitative descriptive studies. Two main screening questions must be answered at the beginning of the process to ensure the review is suitable for appraisal using the MMAT. A checklist and explanation of the criteria was used in the appraisal process. Each article included must be appraised in its appropriate category. The researcher assessed whether the collected data sufficiently supported the interpretation of the research findings and whether there was a sound link between the collected qualitative data, its interpretation, and analysis

3.5 Ethics

This study employed a scoping review methodology, which involved systematically identifying, selecting, and synthesizing data from existing, publicly available literature. As the review did not involve the collection of primary data or direct interaction with human participants, no risk of harm or ethical breach to individuals was present. Nonetheless, ethical clearance was formally obtained from the Humanities and Social Sciences Research Ethics Committee (HSSREC) to ensure institutional compliance and research accountability. The ethical approval reference number is HSSREC/00018294 (Appendix A).

To ensure methodological rigour and transparency, the review process adhered to the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses – Scoping Review extension) guidelines, which outline a structured and reproducible approach to conducting scoping reviews.

Throughout the review, the researcher maintained a strong commitment to academic integrity and accurate representation of source materials. All findings were extracted directly from original studies, and proper attribution was given through detailed referencing. Efforts were made to preserve the meaning, context, and intent of the original authors, ensuring that the data were not misrepresented or selectively interpreted.

The inclusion and exclusion criteria were applied consistently, and documentation of each stage of the selection process was maintained to promote auditability and transparency. Additionally, data management tools such as Microsoft Excel were used to track article selection, coding, and synthesis processes systematically, further supporting the credibility and reliability of the review.

Chapter 4: Results

4.1 Description of Studies

Sexual health among young people has garnered increased attention and research focus in recent years. A growing body of studies has been dedicated to developing and evaluating interventions aimed at improving sexual health outcomes for adolescents and young adults. These interventions generally encompass a variety of components, including comprehensive sexual education, access to reproductive health services, counseling, and mental health support, peer education programs, and outreach initiatives (Muanda et al, 2018). Furthermore, Nelson et al. (2020) consolidate this by stating that efforts are concentrated on equipping young people with the knowledge and resources they need to make informed decisions about their sexual health, while also addressing barriers to accessing care and promoting healthy relationships. This section provides an overview of the general descriptions and characteristics of the studies reviewed. The studies are outlined in Table 4.1. The studies reviewed herein were published between 2014 and 2024.

The sexual health interventions covered/evaluated by the studies were varied as follows: Informed, Motivated, Aware and Responsible Adolescents and Adults (IMARA-SA) [1]; Interactive Transition Support for Adolescents Living with HIV (InTSHA) [2]; Sexual and Reproductive Health Intervention [3]; Auntie Stella [4]; Legal Framework Access to SRH Services [5]; The VUKA Family Program [6]; Mobile Health (mHealth) [7]).

One of the studies [6) used the mixed methods study methodology, while another [1] used the quantitative study methodology. The rest [2, 3, 4, 5, 7] used the qualitative methodology. In terms of data collection methods, three studies collected data through in-depth interviews [2, 3, 6], two studies utilized focus group discussions [4, 6], one study administered a survey [1], one other study conducted a scoping review [7] while yet another study engaged in a literature review [5]. Sample sizes varied across the studies as follows: 53 [1], 101 [2], 137 [3], 42 [4], 74 [6], 12 [7]. One study which reviewed literature as a data collection method did not have a specified sample size. The study population was largely adolescents [1, 2, 3, 7], adolescents & caregivers [1], undergraduate and postgraduate participants[4], and families [6]. The age groups targeted by the studies were 15-19 [1, 2], 10-24; 15-35 [3], 18-26. [4]. The other studies [5,6,7] did not clearly specify targeted age groups.

Most of the reviewed studies were conducted in KwaZulu Natal [1, 2, 3, 4, 6]. Study [4] was carried out in both KwaZulu Natal and Western Cape. The other studies were conducted in the Western Cape [1] and the generality of South Africa [5]. Study [7] was focused on multiple different countries, including South Africa.

Table 4.1 The General Characteristics/Description of Studies Included in this Review

	Author	Publication Year	Intervention	Study Methodology	Study design	Data collection methods	Sample size	Study population	Age	Setting/ Country of origin
1	Merrill, Atujuna, Emerson, Blachman-Demmer, Bray, Bekker & Donenberg	2023	Informed, Motivated, Aware and Responsible Adolescents and Adults (IMARA-SA)	Quantitative	Experimental	Survey	53	Adolescents & their caregivers	15-19	Western Cape
2	Bergam, Sibiya, Ndlela, Kuzwayo, Fomo, Goldstein, Marconi, Haberer, Archary & Zanoni	2022	Interactive Transition Support for Adolescents Living with HIV (InTSHA)	Qualitative	Pilot randomized clinical trial	In-depth Interviews	101	Adolescents	15-19	KwaZulu-Natal
3	Zuma, Seeley, Mdluli, Chimbindi, Mcgrath, Floyd, Birdthistle, Harling, Sheer & Shahmanesh	2020	Sexual & Reproductive Health Interventions	Qualitative	Community mapping, repeat semi structured individual interviews, group discussions	In-depth Interviews	137	Adolescents & adults	10-24; 15-35	KwaZulu-Natal

4	Van der Riet, Akhurst & Wilbraham	2019	Auntie Stella Intervention	Qualitative	Participatory research	Focus Group Discussions	42	Undergraduate & postgraduate participants	18-26	KwaZulu-Natal; Western Cape
5	Strode & Essack	2017	Legal Framework on access to SRH services	Literature Review	Documentary analysis	Literature Review				South Africa
6	Bhana, Mellins, Petersen, Alicea, Myeza, Holst, Abrams, John, Chhagan, Nestadt, Leu, McKay	2014	The VUKA Family Program	Mixed Methods	Randomized controlled trial	Focus Group Discussions; In-depth Interviews	74	Families		KwaZulu-Natal
7	Issacs, Ntiga, Keetsi, Bhembe, Mthembu, Cloete & Groenewald	2024	Mobile Health (mHealth)	Qualitative	Observational study design	Scoping Review	12 studies	Adolescents		Global

4.2 Description of Outcomes

4.2.1 Informed, Motivated, Aware, and Responsible Adolescents and Adults (IMARA-SA)

The study by Merrill et al, (2023) evaluates the effectiveness and implementation outcomes of the Informed, Motivated, Aware and Responsible Adolescents and Adults (IMARA-SA) intervention, which is designed to improve sexual health among adolescent girls and young women (AGYW) in South Africa. This pilot randomized trial aimed to assess the preliminary impact of IMARA-SA on various sexual health outcomes and to evaluate its implementation metrics, such as reach, feasibility, acceptability, and fidelity.

The study employed a two-arm pilot randomized trial design. AGYW and their female caregivers (FC) were randomly assigned to either the IMARA-SA intervention group or a time-matched control group. The study took place in the Klipfontein/Mitchells Plain health sub-district in the Western Cape, South Africa. AGYW were aged 15–19 years, black or mixed race, and resided in the study area. FC had to be 24 years or older and in regular contact with the AGYW. The study enrolled 59 AGYW (29 in the IMARA-SA group and 30 in the control group) with baseline data collected. Follow-up data were analyzed for 51 participants (86% overall, with 90% from IMARA-SA and 80% from the control group).

The intervention involved separate and joint sessions for AGYW and FC, focusing on communication, HIV prevention, and sexual health skills. The curriculum was adapted from the US-based IMARA program and incorporated interactive activities and role-playing. The control received a health promotion program unrelated to sexual and reproductive health, focusing on media literacy, substance use, and nutrition. Differences between intervention and control groups were assessed using chi-square tests, Fisher's exact tests, and logistic regression for primary and secondary outcomes. Metrics were summarized as percentages for reach, feasibility, and acceptability, and fidelity was assessed through observer checklists. The IMARA-SA intervention's integration of individual and joint sessions for AGYW and FC addresses multiple levels of influence on sexual health behaviour. The intervention was delivered with high fidelity and was well-received by participants, suggesting that it was effectively implemented and appreciated. Results indicated less IMARA-SA participants tested positive for STIs compared to controls (22% vs. 38%), though this difference statistically not significant. IMARA-SA participants had higher PrEP uptake (68% vs. 45%) compared to controls, but again, the difference did not reach statistical significance. There was a 100% HTC in both groups, suggesting that both interventions effectively facilitated testing.

IMARA-SA participants reported better outcomes in four of five secondary measures (e.g., condom use, substance use during sex), though none of these differences were statistically significant. IMARA-SA participants reported better PrEP adherence (mean score 60.7) compared to the control group (mean score 54.4), but this was not statistically significant. High acceptability was evidenced by positive evaluations, with 76% of participants giving the highest Likert ratings. Both AGYW and FC reported that they understood the material and learned valuable information.The pilot study had a small sample size, which limited statistical power and the ability to detect significant differences in primary and secondary outcomes. While IMARA-SA showed favourable trends in STI incidence, PrEP uptake, and sexual risk behaviours, these differences did not reach statistical significance, which may be due to the previously outlined small sample size. Follow-up data collection was affected by COVID- 19 restrictions, which could have impacted the overall findings and completeness of data.

The IMARA-SA intervention demonstrates promise in improving sexual health outcomes among South African AGYW. The pilot study shows potential benefits in reducing STI incidence, increasing PrEP uptake, and enhancing sexual risk behaviors. The high reach, feasibility, acceptability, and fidelity of the intervention suggest that it could be a valuable strategy for sexual health promotion in similar settings. A fully powered randomized controlled trial is warranted to confirm these preliminary findings and better assess of IMARA-SA.

4.2.2 Interactive Transition Support for Adolescents Living with HIV (InTSHA)

The study by Bergam et al. (2022) evaluates the effectiveness of the Interactive Transition Support for Adolescents Living with HIV (InTSHA), an mHealth intervention delivered through WhatsApp, on the sexual health knowledge, attitudes, and behaviors of South African adolescents with perinatally-acquired HIV (APHIV). The research aims to address the gap in sexual and reproductive health (SRH) education for this vulnerable population and improve their sexual health outcomes.

The study was conducted in KwaMashu, an urban township in KwaZulu-Natal, South Africa. The intervention involved making use of InTSHA, a WhatsApp-based intervention involving 12 virtual group chat sessions covering SRH topics, moderated by trained facilitators. The intervention included modules on treatment adherence, stigma, self-efficacy, relationships, goals and future planning, and SRH. The study involved a randomized clinical trial where 80 adolescents (aged 15–19) were randomized into intervention and control groups. It also involved in-depth interviews (IDIs) with 21 participants who completed the SRH modules, exploring their experiences and perceptions of the intervention. Thematic Analysis was done, to identify themes related to SRH knowledge, attitudes, and behaviors before and after the intervention. A coding process utilized Dedoose software for organizing and analyzing qualitative data. Participants reported gaining a comprehensive understanding of SRH, including relationships, gender, and sexuality, specifically tailored to their experiences with HIV. The intervention facilitated discussions about SRH with caregivers and peers, which were previously lacking or uncomfortable.

Following the intervention, adolescents felt more confident discussing SRH topics, both within the group and with others outside the intervention. There was also improved decision-making regarding relationships and sexual health was reported, supported by the peer and facilitator interactions. The moderated WhatsApp groups provided a safe space for adolescents to share experiences and seek advice, enhancing their comfort with discussing sensitive topics. Participants appreciated the peer support and shared experiences, which contributed to a more engaging and supportive learning environment.

While the intervention was effective for those with smartphones and data access, it may not be feasible for all APHIV due to variations in technology access and data availability. Participants reported issues with privacy at home and concerns about phone-sharing, which could affect their comfort with the intervention. Additionally, the study's qualitative nature and short follow-up limited the ability to assess long-term impacts on SRH knowledge and behavior change. Without a control group in the qualitative analysis, it is challenging to differentiate the specific impact of InTSHA from other potential influences on SRH outcomes. Participants may have provided socially desirable responses due to the reimbursement and the presence of facilitators, affecting the authenticity of their feedback. The study's small sample size and specific setting may limit the generalizability of the findings to other populations or regions. The intervention’s reliance on smartphones may not be practical for all adolescents, especially in resource-limited settings where mobile access is restricted.

The study by Bergam et al. (2022) provides valuable insights into the effectiveness of the InTSHA mHealth intervention for improving SRH knowledge, attitudes, and behaviors among South African adolescents with perinatally-acquired HIV. The use of WhatsApp as a platform for delivering targeted SRH education proved beneficial in fostering a supportive and engaging learning environment. However, the study also highlights limitations related to technology access, confidentiality, and the need for long-term impact assessments. Future research should address these limitations and explore ways to scale and adapt mHealth interventions to broader populations and settings.

4.2.3 Sexual and Reproductive Health Interventions

The study aimed to explore and analyze the experiences of adolescents and young people (AYP) with sexual and reproductive health (SRH) interventions, specifically within the context of the DREAMS Partnership implemented in rural KwaZulu-Natal, South Africa. Zuma et al. (2020) write about the DREAMS Partnership (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe) as a multisectoral HIV prevention program designed to reduce HIV infections among adolescent girls and young women (AGYW) and their male partners. The study's objective was to understand both the positive and negative experiences of AYP with these interventions to improve engagement and effectiveness. The study employed a qualitative research design to gather in-depth insights into participants' experiences and perceptions of SRH interventions.

The finding of the study shows that accurate HIV and SRH-related information empowered AYP to make informed decisions and access health services. For instance, participants who received relevant information reported better use of healthcare services. It was noted that responsive and supportive healthcare providers were crucial in encouraging AYP to utilize services. Positive relationships with family and peers were protective factors, enhancing self-efficacy and engagement with interventions. Home-Based Testing provided privacy and confidentiality, which were significant barriers for AYP seeking SRH services.

Community caregivers linked individuals to various services, bridging gaps in access and reducing stigma (Zuma et al., 2020).

However, AYP frequently faced stigma and judgment from healthcare providers and community members, hindering their engagement with services. Fear of being judged for engaging in sexual activities often prevented them from seeking help. Cross-generational relationships and substance abuse (e.g., alcohol and drugs) were significant risk factors for HIV transmission and poor engagement with interventions. Contributing to school dropout and limiting future opportunities, unplanned pregnancies were common among AGYW, exacerbated by misinformation and fear about contraception.

The DREAMS interventions did not adequately address the gendered nature of risks. For instance, interventions focused more on AGYW without adequately involving young men or addressing broader gender dynamics. Repeated interviews with the same participants allowed for a deeper understanding of changing experiences and perceptions over time. The combination of in depth interviews, group discussions, and community mapping provided a multi-dimensional view of AYP's experiences and the effectiveness of interventions. Further, detailed community mapping and qualitative data helped contextualize the challenges and barriers faced by AYP.

Notwithstanding the strength of the study methodologies discussed earlier, the study did not include quantitative measures of HIV/STI status or detailed demographic data, limiting the ability to link qualitative findings to specific health outcomes. Loss to follow-up may have introduced bias or missed perspectives. Also, the study did not assess how effectively the DREAMS program's interventions were implemented or adapted to local needs beyond general observations. The study highlights the importance of addressing both individual and contextual factors in designing and implementing SRH interventions. While the DREAMS Partnership made strides in improving access to information and services, significant gaps remain, particularly in addressing gender norms, stigma, and the needs of young men. Future interventions should focus on: Designing interventions that consider gender dynamics and incorporate the perspectives of both AGYW and young men; ensuring that interventions continue to offer privacy to reduce stigma and judgment; engaging communities and policymakers to support sustainable and comprehensive approaches to SRH.

4.2.4 Auntie Stella Intervention

The study by Van der Riet, Akhurst & Wilbraham (2019) is a comprehensive evaluation of the Auntie Stella (AS) program, an SRH intervention originally developed in Zimbabwe, applied within South African university contexts. The goal was to determine the effectiveness of the AS material in engaging university students in discussions about sexual and reproductive health (SRH), and to identify the gaps and strengths of the intervention when adapted for this specific population.

Developed by the Training and Research Support Centre (TARSC) in Zimbabwe, the AS program consists of educational cards that simulate an "agony aunt" advice column. Each card features a question related to SRH issues and provides a narrative response, guiding participants through a series of reflective activities and discussions. The cards address a broad range of topics including transactional sex, peer pressure unplanned pregnancies, relationships, gender-based violence, and STIs (including HIV). For university students, the material was selectively adapted to focus on issues more pertinent to their age group and context. The intervention utilized a peer-led, participatory approach. Slightly older students facilitated group discussions these students had obtained basic training in the AS content. This peer-led format aimed to create a relatable and engaging environment for discussion. Cards were selected based on their relevance to university-level students, including topics such as safer sex negotiation and communication in relationships, while excluding more basic topics such as household caring arrangements and biological aspects of puberty.

Participants to the study were recruited through social media, notice boards, and snowball sampling, targeting undergraduate and postgraduate students aged 18 to 26 from two urban university campuses. This diverse recruitment strategy aimed to capture a broad spectrum of student experiences. The study involved 42 students, with a mix of male, female, and alternative identities. This diversity was crucial for understanding different perspectives on SRH issues. Focus group discussions were organized to foster open dialogue. Discussions were facilitated by postgraduate students who were trained to prompt and guide the conversation without dominating it. This approach aimed to empower participants to lead the discussions based on their own experiences and knowledge.

Discussions were conducted primarily in English, with code-switching to isiZulu and isiXhosa as needed. Sessions were audio-recorded, transcribed, and translated, ensuring that all nuances of the conversation were captured and analyzed. Thematic analysis as outlined by Braun and Clarke, (2006), was used to analyze the qualitative data. This approach involved identifying recurring themes and patterns in the discussions, highlighting key tensions and contradictions in students' attitudes and behaviors concerning SRH.

The participatory approach successfully created a space for open and honest discussions about SRH. Students engaged deeply with the content, sharing personal experiences and perspectives, which facilitated critical thinking about their own behaviors and attitudes. The AS material prompted discussions on complex issues such as transactional sex and gender-based violence, helping students to explore these topics in depth and consider their implications for SRH.

Despite high levels of awareness about HIV transmission and SRH risks, students exhibited behaviors that contradicted their knowledge. For instance, inconsistent condom use and risky behaviors under alcohol influence were reported, reflecting a gap between awareness and practical application of SRH knowledge. The study highlighted the persistent stigma surrounding HIV, which influenced students' attitudes towards disclosure and protective practices. Although participants were aware of the risks, stigma and fear of social repercussions often led to less effective SRH practices. While the AS materials addressed important SRH issues, some content needed further adaptation to better reflect the specific realities of university students. Issues like public shaming and violence related to HIV disclosure were not fully covered, which affected the relevance of the materials. The study underscored the importance of cultural and contextual sensitivity in designing SRH interventions. The materials needed to be adjusted to align with the social and cultural dynamics of the university setting. Some participants criticized the advice provided in the AS materials as being overly simplistic. For example, advice on avoiding rape was seen as placing undue responsibility on women, rather than addressing systemic issues and power imbalances. The AS materials did not always provide realistic solutions for complex issues such as transactional relationships and intimate partner violence. This limitation impacted the effectiveness of the intervention in addressing these critical SRH concerns. The basic training provided to facilitators may have limited their ability to handle complex discussions and sensitive issues effectively. Enhanced training could improve the quality of facilitation and the impact of the intervention. The need for further adaptation of the AS materials was evident. The materials should be customized to address the specific experiences and challenges faced by university students, ensuring that they are relevant and applicable. While the intervention successfully generated discussion and raised awareness, there was limited evidence of concrete behavioural changes. The focus was primarily on understanding students' perspectives rather than measuring the impact on actual behaviour.

The study by Van der Riet, Akhurst & Wilbraham (2019) thoroughly examines the Auntie Stella intervention in a university setting. The participatory and peer-led approach of the AS materials effectively engaged students in discussions about SRH and highlighted key issues and challenges. However, the intervention's impact was limited by the need for further adaptation to address the specific context of university students and the complexities of SRH-related behaviours. Future interventions can focus on customizing the AS materials to better reflect the experiences and challenges of university students, addressing issues such as stigma, violence, and power imbalances; providing more comprehensive training for facilitators to improve their ability to navigate complex discussions and sensitive topics; employing additional methods to measure and track behavioural changes, ensuring that the intervention leads to tangible improvements in SRH practices. Overall, the study underscores the importance of context-specific interventions and the need for ongoing adaptation and evaluation to effectively address SRH issues among young adults.

4.2.5 Legal Framework on Access to SRH Services

Strode and Essack's (2017), study critically examines South Africa's legislative framework concerning adolescents' access to sexual and reproductive health (SRH) services. The study evaluates the effectiveness of the South African legal framework in facilitating or hindering adolescents' ability to access these services independently, identifying strengths, weaknesses, and areas for improvement. The authors aim to provide insights and lessons that could guide legislative reforms in other countries.

The study used a qualitative research design to analyze and interpret South African legislation and related legal provisions on adolescent SRH services. This approach enables a comprehensive examination of the nuances in the legal framework and its impact on adolescents. The research involved a comparative analysis of South Africa's legislative measures with international standards and practices. This comparison highlights the alignment or divergence of South African laws with global recommendations and identifies best practices from other jurisdictions.
The study systematically reviewed several key pieces of South African legislation:

- Children's Act No. 38 of 2005: Governs the rights of children, including provisions related to consent for various SRH services.
- Choice of Termination of Pregnancy Act No. 92 of 2007: Provides guidelines for accessing abortion services, including provisions for minors.
- Sexual Offences Act No. 32 of 2007: Sets out the legal framework for consensual sex and sexual offences, including the age of consent and legal protections.
- Other Relevant Legislation: Includes laws related to medical treatment and prescription drugs that impact adolescent access to SRH services.

The study reviews academic literature, case law, and empirical research on adolescent SRH rights and access to services. This secondary data provides context and insight into the practical implications and challenges of the legal framework. The authors used thematic analysis to identify and discuss key themes related to the legislative framework. Themes included age requirements, capacity to consent, public policy considerations, and specific SRH services. The analysis evaluated how effectively the legal framework facilitates adolescent access to SRH services and identifies any barriers or inconsistencies that affect service delivery. South Africa's approach to adolescent sexual consent is relatively progressive. The Sexual

Offences Act allows consensual sex at 16 years of age and permits adolescents aged 12-15 to engage in consensual sex with peers within a 2-year age gap without facing criminal sanctions. This approach reflects a rights-based view of adolescent sexuality and aims to balance protection with autonomy. South Africa's legislation provides adolescents with the right to access various SRH services independently, including HIV testing, contraceptives, and terminations of pregnancy. This approach acknowledges adolescents' capacity to make informed decisions about their health and seeks to ensure that their access to essential services is not hindered by parental consent requirements.

The Children's Act allows adolescents aged 12 and older to consent to HIV testing and access contraceptives. This provision is crucial for addressing high rates of HIV and unintended pregnancies among adolescents, particularly in a high-prevalence country like South Africa. Termination of Pregnancy (Choice of Termination of Pregnancy Act): The Choice of Termination of Pregnancy Act permits individuals of any age to consent to abortion services. This provision ensures that adolescents, regardless of age, can access abortion services safely and independently if needed. Separation of SRH Services from General Medical Treatment: South Africa's legislative framework separates SRH services from general medical treatment, allowing for tailored legal and policy measures for each type of service. This separation enables specific regulations and protections for SRH services, which might be more complex or sensitive compared to general medical treatments.

The framework exhibits inconsistencies between criminal law and children's law. For instance, while the Sexual Offences Act allows certain consensual sexual activities among adolescents, it still criminalizes cases where there is more than a 2-year age gap between partners. This inconsistency can create legal uncertainties and potential legal consequences for adolescents, particularly girls who may have older partners. The prohibition of sterilisation for individuals under 18 is appropriate given the WHO's recommendations, but the lack of clarity on new SRH interventions, such as HIV vaccines and microbicides, creates uncertainty. This gap could limit adolescents' access to emerging treatments that are crucial for their health. The requirement for adolescents to demonstrate ‘sufficient maturity’ for certain SRH services, such as medical treatment, introduces subjectivity into the consent process. The lack of clear guidelines on assessing maturity and capacity can lead to inconsistent application and potential barriers to accessing services.

The legal allowance for virginity testing, as stipulated in the Children’s Act, raises significant ethical concerns. Virginity testing is widely criticized for violating privacy, bodily integrity, and dignity. This practice is inconsistent with the rights-based approach adopted for other SRH services and could undermine adolescents' rights. The requirement for public policy standards in services like HIV testing and male circumcision can be cumbersome and potentially impede access. For example, the requirement that HIV testing must be in the ‘best interests’ of the child has been criticized for being a barrier to testing, particularly if it introduces unnecessary complexity or delays. The obligation for healthcare providers to report consensual sex or relationships with older partners can deter adolescents from seeking SRH services. Fear of legal repercussions or social stigma associated with reporting may lead to reluctance in accessing necessary health services.

There is a need for greater consistency between different areas of law affecting adolescents. Aligning the ages of consent for sex, medical treatment, and SRH services can reduce legal uncertainties and improve access to necessary services. Ensuring that legislative provisions are harmonized will help avoid contradictions and enhance the overall effectiveness of the legal framework. Legislators are encouraged to provide clear definitions and guidelines for key terms and capacity requirements. This clarity will help service providers assess adolescent capacity more effectively and ensure that adolescents can access SRH services without unnecessary barriers. The legal framework should attempt to continue to prioritize adolescents' rights, focusing on their health and autonomy. Ensuring that legal provisions respect adolescents' privacy, bodily integrity, and dignity is essential for protecting their rights while providing access to SRH services.

While respecting cultural practices, legislation should additionally attempt to be more equitable on adolescents' rights. A careful balance should be struck between acknowledging cultural practices and ensuring that these practices do not violate adolescents' rights or access to essential SRH services. Developing detailed guidelines and providing training for healthcare providers on assessing adolescent capacity is crucial. These guidelines should include practical tools and criteria for evaluating maturity and understanding to ensure fair and consistent assessments. The legal framework is encouraged to be adaptable to include new SRH interventions and technologies. Regular updates to legislation can ensure that adolescents have access to the latest health innovations and treatments, such as new HIV prevention methods. Countries such as South Africa, can benefit from international collaboration and sharing best practices regarding adolescent SRH legislation. Engaging with international bodies and learning from other countries' experiences can provide valuable insights and help improve legal frameworks for adolescent SRH services.

Strode and Essack's (2017) study provides a detailed analysis of South Africa's legal framework for adolescent SRH services, highlighting both its strengths and limitations. While South Africa's approach is progressive in many ways, there are significant areas for improvement, particularly in terms of harmonizing legal standards, clarifying capacity requirements, and addressing ethical and cultural concerns. By learning from South Africa's experience, other countries can develop more effective and equitable legal frameworks that support adolescents' sexual and reproductive health and rights.

4.2.6 The VUKA Family Program

The study by Bhana et al. (2014), evaluates the VUKA Family Program, a family-based psychosocial intervention designed to improve health and mental health outcomes among HIV-infected early adolescents in South Africa. The intervention builds upon the Collaborative HIV prevention and Adolescent Mental Health Family Program (CHAMP) model, adapting it to address the specific needs of young people living with HIV (YPWLHIV) through culturally relevant materials and a structured curriculum. This detailed analysis focuses on the methodology used in the study and evaluates the effectiveness and shortcomings of the VUKA program.

The VUKA Family Program was developed based on formative qualitative interviews with adolescents and caregivers. These interviews identified specific psychosocial issues faced by YPLWHIV, such as bereavement, identity challenges, stigma, and difficulties with ART adherence. The adaptation process involved reviewing existing intervention materials (CHAMP, CHAMP+, CHAMPSA) and incorporating feedback from both patients and providers to create a culturally tailored curriculum. The VUKA program retained the CHAMP structure of engaging multiple child-caregiver pairs and used a cartoon-based storyline to facilitate discussions. The storyline follows a 12-year-old boy who, after being orphaned by AIDS, moves in with relatives and learns about his HIV diagnosis and treatment. The curriculum includes topics such as bereavement, HIV transmission, disclosure, identity, adherence, stigma, and caregiver-child communication.

The pilot study was conducted at two clinical sites in KwaZulu-Natal, South Africa: Durban Site: - a subsidized not-for-profit hospital serving both adults and children with HIV/AIDS; Pietermaritzburg Site - a public hospital primarily serving low-income patients and a major site for ART rollout. Eligible participants were children aged 10-14 years enrolled in HIV care, aware of their HIV status, and with consent from both child and caregiver. A total of 74 families were enrolled, with 65 completing baseline assessments. The intervention consisted of 6 sessions held over 3 months (2 Saturdays per month). The sessions were led by lay counselors under the supervision of a psychologist. The program was delivered in multi-family groups with separate activities for caregivers and children. Participants were assessed at baseline and approximately two weeks after the final session (post-test). A total of 59 families (91%) completed the post-test assessment. Generalized Linear Models (GLM) and Generalized Estimating Equations (GEE) were used to compare changes in outcomes between VUKA and comparison groups over time. Key outcomes included ART adherence, HIV treatment knowledge, and caregiver-child communication. Focus group interviews (n=20) and in-depth individual interviews (n=6) with intervention caregivers were conducted to gather qualitative feedback on the program's impact. Thematic analysis was used to identify common themes from the interviews.

Youth in the VUKA group showed significantly greater improvement in ART adherence compared to the comparison group. The reported adherence change score for the VUKA group was 1.10, compared to -0.43 for the control group ($p < 0.05$). There was a trend indicating that VUKA participants had improved knowledge about HIV treatment compared to the control group (VUKA = 0.27; Control = -0.74; $p < 0.08$). Caregivers in the VUKA group reported significantly greater improvement in comfort communicating with their children about sensitive topics (VUKA = 0.26; Control = -0.54; $p < 0.002$). There was a trend toward reduced perceptions of stigma among caregivers in the VUKA group compared to the control group (VUKA = -0.21; Control = 0.28; $p < 0.09$).

Caregivers noted that VUKA helped improve their children’s adherence to medication by normalizing their experience and fostering a sense of community among HIV-positive children. The intervention positively impacted participants' self-esteem and future outlook, largely due to the influence of the cartoon character Themba, who modeled a positive HIV-positive identity. Participants reported strengthened social support networks and friendships with other families affected by HIV, which contributed to better emotional support and shared experiences. The program helped caregivers address sensitive topics with their children, such as puberty and HIV, by providing structured guidance and resources. Storybooks used in the program facilitated discussions about HIV within families, leading to increased involvement and support from other family members. The study’s small sample size limits the generalizability of the findings.

The small number of participants may potentially affect the statistical power of the results. There may be selection bias in the families who volunteered for the study, possibly affecting the representativeness of the sample. Families who agreed to participate may have been more motivated or better resourced than those who did not. The study relied on self-reported measures of ART adherence, which can be prone to bias. Participants might overreport adherence due to social desirability or recall issues. While the intervention was feasible in the pilot settings, scaling up VUKA to other settings may face challenges related to resources, staff training, and cultural adaptation. The effectiveness of lay counsellors and the logistical aspects of delivering the program in diverse health settings need further examination.

The study assessed outcomes immediately after the intervention, which may not capture the long-term impact of the VUKA program. Long-term follow-up is necessary to evaluate sustained effects on adherence, mental health, and family dynamics. The pilot study of the VUKA Family Program demonstrates promising results in improving ART adherence, HIV treatment knowledge, and caregiver-child communication among HIV-positive adolescents and their families. The culturally tailored intervention effectively engaged families and provided valuable support through a structured curriculum and cartoon-based storyline. However, the study’s limitations, including the small sample size, reliance on self-reported data, and the short duration of follow-up, suggest the need for further research to confirm these findings and assess the program's scalability and long-term effectiveness. Despite these shortcomings, the VUKA program represents a valuable approach to addressing the psychosocial needs of YLWPHIV in resource-constrained settings and highlights the potential for lay counselors to deliver effective family-based interventions.

4.2.7 Mobile Health (mHealth)

In respect of the search terms and inclusion/exclusion criteria, the inclusion criteria required studies to evaluate an mHealth intervention related to SRH, rather than merely describing it. Only English-language articles were considered. Studies had to be peer-reviewed, ensuring quality and validity. The initial search yielded 636 titles, which were narrowed down to 126 after removing duplicates and irrelevant titles. After abstract reviews, 53 articles were selected, and 26 of these were included in the final cococoding. A second round of searches resulted in 125 titles, with 21 full-text articles finally included. In total, 47 articles were reviewed, but only 12 were selected for detailed analysis based on their relevance and quality.

The review identified several mHealth interventions across different regions and contexts, focusing primarily on enhancing SRH knowledge among adolescents. These interventions included text messaging programs, app-based solutions, and SMS-based educational campaigns. Most studies employed rigorous evaluation designs, including randomized controlled trials (RCTs), which are considered the gold standard in research for establishing causality. Interventions varied from unidirectional text messaging (providing information only) to interactive approaches involving quizzes and feedback. Examples include the TeenSmart International intervention in Nicaragua, the SMS-based intervention in Indonesia, and the Healthy U app in the USA.

The review found that mHealth interventions generally had a positive impact on enhancing SRH knowledge among adolescents. For instance in Ghana, an intervention involving text messages and quizzes showed significant improvements in SRH knowledge among adolescent girls. The TeenSmart International intervention demonstrated a notable increase in SRH knowledge scores among Nicaraguan youth. Despite the positive impact on knowledge, the review highlighted mixed results regarding behavioral outcomes. In some studies, interactive interventions led to an increased likelihood of contraceptive use but did not necessarily improve condom use. This suggests a shift towards using contraceptives primarily for pregnancy prevention rather than STI prevention. Certain interventions significantly reduced the likelihood of self-reported pregnancy, although the effects on broader behavioral changes such as sexual activity and STI prevention were less clear. Privacy was a major issue, particularly when participants shared devices or had concerns about others accessing their messages. Additionally, participants faced issues like limited access to mobile phones, difficulties in purchasing phone credits, and poor internet connectivity, which affected their ability to fully engage with the interventions.

Some interventions faced challenges in content relevance, such as the discomfort with topics considered culturally sensitive. In some cases, participants reported unmet needs and additional questions about SRH topics that were not fully addressed by the intervention content. The review noted a lack of focus on LGBTIQ+ youth, which is a significant gap given the increasing use of technology in SRH research. The absence of targeted interventions for this group highlights a broader issue of inclusivity in mHealth SRH programs. While knowledge enhancement was consistently observed, translating this knowledge into sustained behavioural change proved challenging. Many interventions did not show significant changes in behaviors such as condom use or health-seeking practices, indicating a need for more comprehensive approaches that integrate behaviour change models.

Future mHealth interventions are proposed to aim to integrate knowledge dissemination with evidence-based behavior change strategies. This approach should consider social, cultural, and demographic factors to enhance relevance and effectiveness. Long-term evaluations are necessary to assess the sustainability and impact of mHealth interventions on behaviour over time. Short-term studies may not capture the full effects of these interventions on behavioural change. Leveraging artificial intelligence (AI) and other technological advancements could enhance the personalization and scalability of mHealth interventions. AI-driven tools like chatbots could offer tailored support and real-time feedback, potentially improving engagement and outcomes. Additionally, ensuring that mHealth interventions are inclusive and address the needs of diverse populations, including LGBTIQ+ youth, is crucial. Furthermore, addressing privacy, accessibility, and cultural relevance could potentially help in designing more effective and equitable SRH interventions.

Chapter 5: Discussion

5.1 Findings

The studies reviewed in this discussion offer valuable insights into the effectiveness and implementation of sexual and reproductive health (SRH) interventions among adolescents and young people in South Africa . Each study presents unique findings that contribute to understanding and improving SRH outcomes in different contexts.

The study by Merrill et al. (2023) evaluated the IMARA-SA intervention, designed to enhance sexual health among adolescent girls and young women (AGYW) in South Africa. The IMARA-SA program, adapted from the US-based IMARA program, was implemented through a pilot randomized trial involving 59 AGYW and their female caregivers (FC). The intervention included sessions on communication, HIV prevention, and sexual health skills, with the goal of improving various sexual health outcomes. The high fidelity of delivery and the integration of individual and joint sessions for AGYW and FC underline the intervention’s comprehensive approach to addressing multiple levels of influence on sexual health behavior (Merrill et al., 2023).

The study's small sample size limited its statistical power, preventing the detection of significant differences in primary and secondary outcomes. Additionally, follow-up data collection was impacted by COVID-19 restrictions, which may have affected the completeness and accuracy of the findings. These limitations highlight the need for a fully powered randomized controlled trial to confirm the preliminary results and assess the effectiveness of IMARA-SA more robustly.

Bergam et al. (2022) investigated the Interactive Transition Support for Adolescents Living with HIV (InTSHA) intervention to deliver SRH education to adolescents with perinatally-acquired HIV (APHIV). This mHealth intervention aimed to improve SRH knowledge, attitudes, and behaviors among APHIV adolescents. The InTSHA intervention proved effective in enhancing SRH knowledge and confidence among participants. Adolescents reported increased comfort discussing SRH topics and improved decision-making regarding relationships and sexual health. WhatsApp was used to increase interaction and offer a versatile platform for content delivery. The moderated WhatsApp groups created a supportive learning environment that was particularly valued for its peer support and the safe space it provided for discussing sensitive topics (Bergam et al., 2022).

The viability of the intervention for all participants was, however, constrained by problems with technological access, such as the requirement for cellphones and data, as well as worries about privacy at home. These elements imply that although the intervention was advantageous for those who could access it, it might not be appropriate to everyone (Bergam et al., 2022). The study's qualitative design and brief follow-up time made it difficult to evaluate long-term effects on SRH knowledge and behaviour modification. Furthermore, it is difficult to distinguish the precise effects of InTSHA from other variables in a qualitative investigation without a control group.

The qualitative study exploring the DREAMS Partnership in KwaZulu-Natal focused on understanding the experiences of adolescents and young people (AYP) with SRH interventions. The DREAMS Partnership is a multisectoral HIV prevention program aimed at reducing HIV infections among AGYW and their male partners. The study demonstrated that AYP's use of SRH services was greatly enhanced by reliable SRH information and competent health care providers. Enhancing self-efficacy and accessibility to healthcare additionally required positive relationships with peers and family. According to the DREAMS Partnership study, home-based testing and community carer involvement contributed to narrowing access gaps and decreasing stigma. The study found inadequacies with respect to the dynamics of gender and addressing the nuanced needs of young men, despite its noteworthy progress in expanding access to SRH information and services overall. Significant obstacles that hindered the efficacy of the methods were stigma, healthcare practitioners' judgement, and risk factors such as substance dependency. Additionally, the study emphasised how crucial it is to take contextual elements into account when developing effective interventions (DREAMS Partnership, 2020 in George et al, 2020).

The study's lack of quantitative measures and detailed demographic data limited the ability to link qualitative findings to specific health outcomes. Loss to follow-up and the absence of an assessment of the intervention’s adaptation to local needs further constrained the study’s findings. The need for a comprehensive approach that addresses both individual and contextual factors in future SRH interventions was emphasized

The study conducted by Van der Riet et al. (2019), thoroughly evaluates the Auntie Stella (AS) program. This program, designed by the Training and Research Support Centre (TARSC), employs educational cards resembling an "agony aunt" advice column to address various SRH issues. The study's primary objectives were to assess the effectiveness of the AS materials in engaging university students and to identify any gaps and strengths in the intervention when adapted to this specific demographic.

The AS program features educational cards with questions and narrative responses on diverse SRH topics, including relationships, peer pressure, unplanned pregnancy, gender-based violence, STIs, and transactional sex (Van der Riet, Akhurst, & Wilbraham, 2019). For university students, the materials were selectively adapted to focus on issues pertinent to their age group and context, such as safer sex negotiation and communication in relationships, while excluding more basic topics like biological aspects of puberty and household responsibilities. This adaptation aimed to make the content more relevant and engaging for the target audience.

The goal of the peer-led intervention approach was to encourage candid conversation while providing an authentic and stimulating setting for the participants. The discussions led by trained postgraduate students were to provide a guided yet non-threatening environment. According to the study, the participative method effectively promoted open dialogue regarding SRH. Students contributed their own experiences and critically reflected on their attitudes and behaviours, demonstrating a strong engagement with the material. Students had the opportunity to completely explore complex issues such as gender-based violence and transactional sex due to the AS materials, which fostered extensive discussions on these subjects (Van der Riet et al., 2019). Nonetheless, there was a discernible discrepancy between knowledge and practice despite widespread awareness of HIV transmission and SRH dangers. Students reported using condoms inconsistently and engaging in risky behaviours when intoxicated. The persistent stigma surrounding HIV influenced students' attitudes towards disclosure and protective practices, leading to less effective SRH practices despite their awareness Limitations in the AS materials were noted in the study, including inadequate discussion of topics involving violence and public humiliation associated with HIV revelation. Some participants considered the advice appeared overly basic, especially when it came to dealing with societal issues and power disparities. Enhancing training could increase facilitation and the impact of the intervention, as the basic training given to facilitators was also identified as a potential restriction (Van der Riet et al. 2019). The investigation became clear that the AS materials needed to be further modified in order to properly represent the unique circumstances and difficulties that learners in higher education encounter. Future initiatives should concentrate on developing materials that more effectively address violence, stigma, and power disparities, offering thorough training to facilitators, and utilizing extra techniques to monitor and measure behavioural changes. This approach will help ensure that the intervention leads to tangible improvements in SRH practices among students (Van der Riet, Akhurst, & Wilbraham, 2019).

The Strode and Essack (2017) study critically examines the legislative framework in South Africa regarding adolescents' access to sexual and reproductive health (SRH) services. The study evaluates how effectively the legal framework facilitates or hinders adolescents' ability to access SRH services independently, identifying strengths, weaknesses, and areas for improvement. This analysis provides insights that could inform legislative reforms in other countries. The study used a qualitative research design to analyze South African legislation and its impact on adolescent SRH services. A comparative analysis with international standards highlighted areas of alignment and divergence, providing a comprehensive examination of the legal framework (Strode & Essack, 2017).

The study found a number of limitations in spite of several adaptive and progressive components. The criminalisation of consensual sexual relations with an age difference greater than two years might have legal ramifications for adolescents due to the inconsistencies between criminal law and children's legislation. Although the WHO recommends against sterilising anyone under the age of 18, there is uncertainty due to the unclear nature of emerging SRH interventions. Additionally, inconsistent application and obstacles to service access may result from the subjective evaluation of "sufficient maturity" for specific SRH services (Strode & Essack, 2017).

The study by Bhana et al. (2014) provides an in-depth evaluation of the VUKA Family Program, a family-based psychosocial intervention aimed at improving health and mental health outcomes among HIV-infected early adolescents in South Africa. The program is grounded in the CHAMP model and tailored to address the specific needs of young people living with HIV (YPLWHIV). Based on the study's findings, this discussion will delve into the methodology, effectiveness, and limitations of the VUKA program. The VUKA program demonstrated significant improvements in several key outcomes.

The VUKA program's results indicate that it improved treatment compliance, promoted improved caregiver-child communication together with a more supportive atmosphere. Caregivers' qualitative remarks emphasized numerous benefits from engaging in the program. Through the persona of Themba, the intervention enhanced self-esteem, prospects for the future, promoted an awareness of community, and helped normalize the HIV experience for kids. These encouraging findings suggest that the VUKA program can improve clinical outcomes and emotional health by addressing various facets of HIV care for young people and their carers'. However, to establish the program's long-term impacts, especially on HIV treatment awareness and stigma reduction, additional research is essential. In order to guarantee that improvements in these areas are statistically significant, future iterations of the program might profit from a greater number of participants along with increased attention to improving methods of communication. Sustaining the positive changes seen in this study and increasing the program's impact on a larger scale require ongoing assistance for the kids and carers.

The study faced several limitations. The small sample size limited the generalizability of the findings and potentially affected the statistical power of the results. There was also a risk of selection bias, as families who volunteered might have been more motivated or better resourced than those who did not. Self-reported measures of ART adherence could be biased, with participants potentially overreporting adherence due to social desirability or recall issues. The study's short follow-up period may not fully capture the long-term impact of the intervention on adherence, mental health, and family dynamics. Additionally, while the program was feasible in the pilot settings, scaling it to other contexts may face challenges related to resources, staff training, and cultural adaptation.

5.2 Gaps Identified in the Interventions

With reference to the ***IMARA-SA*** intervention, the small sample size (59 AGYW) limited the study's ability to detect statistically significant differences between the intervention and control groups. This constraint affected the robustness of the findings related to STI incidence, PrEP uptake, and sexual risk behaviors (Merrill et al., 2023). Larger sample sizes in future studies could enhance statistical power and provide more definitive evidence of effectiveness. Limitations in statistical significance suggest that the study may not have been adequately powered to detect the impact of the intervention on STIs, PrEP uptake, and adherence The study's follow-up period was relatively short, limiting the assessment of long-term outcomes such as sustained behavior changes and health improvements (Merrill et al., 2023). Longer-term studies are needed to evaluate the durability of the intervention's impact.

The follow-up data collection was impacted by COVID-19 restrictions, potentially affecting the quality and completeness of the data (Merrill et al., 2023). Addressing this limitation in future studies by accounting for potential disruptions will be crucial for obtaining reliable results. While the IMARA-SA intervention was adapted from the US-based IMARA program, it is essential to continuously refine and localize the content to better address the specific needs and contexts of AGYW in South Africa (Merrill et al., 2023). Ongoing adaptation and evaluation can ensure that the intervention remains relevant and effective.

The reliance on WhatsApp and smartphones for delivering the ***InTSHA*** intervention posed feasibility issues, particularly for adolescents with limited access to technology (Bergam et al., 2022). Variability in technology access and data availability may limit the intervention's reach and effectiveness in resource-constrained settings. Issues with privacy, such as concerns about phone-sharing and limited confidentiality at home, were reported by participants (Bergam et al., 2022). Ensuring secure and private access to the intervention is critical for maintaining participant comfort and engagement. The study's qualitative nature and short follow-up period limit the ability to assess long-term impacts on SRH knowledge and behavior change Longer-term assessments and quantitative measures could provide a more comprehensive understanding of the intervention's effectiveness. The lack of a control group in the qualitative analysis complicates the attribution of observed changes specifically to the InTSHA intervention rather than other potential influences (Bergam et al., 2022).

Including a control group in future studies could help establish clearer links between the intervention and outcomes. The small sample size and specific urban setting of KwaMashu may limit the generalizability of the findings to other populations or regions (Bergam et al., 2022). Expanding the study to diverse settings and larger samples can enhance the applicability of the results.

The DREAMS Partnership interventions primarily focused on adolescent girls and young women without adequately involving young men or addressing broader gender dynamics (DREAMS Partnership, 2024). Future interventions should incorporate gender-sensitive approaches and engage both genders to address the multifaceted nature of sexual health risk. Despite providing home-based testing to enhance privacy, stigma, and judgment from healthcare providers and community members persisted, affecting engagement with services (DREAMS Partnership, 2024). More comprehensive strategies to reduce stigma and ensure confidentiality are necessary for improving service utilization. The study highlighted issues such as substance abuse and school dropout that were not fully addressed by the DREAMS interventions (DREAMS Partnership, 2024). Integrating a more holistic approach that addresses these broader social determinants of health could enhance the effectiveness of the interventions.

The study lacked quantitative measures of HIV/STI status and detailed demographic data, which limits the ability to link qualitative findings to specific health outcomes (DREAMS Partnership, 2024). Additionally, the effectiveness and adaptation of the interventions to local needs were not thoroughly assessed, suggesting a need for more detailed implementation evaluations.Loss to follow-up may have introduced bias or missed perspectives, impacting the study's conclusions (DREAMS Partnership, 2024). Strategies to minimize loss to follow-up and ensure comprehensive data collection are essential for improving the reliability of findings.

Though effective in initiating discussions, the ***Auntie Stella (AS)*** materials required further adaptation to reflect the specific realities and challenges faced by university students (Van der Riet et al.2019). Tailoring content to address this population's unique experiences and issues can enhance the intervention's relevance and impact. The study observed high engagement with the AS materials but reported limited evidence of actual behavioral changes (Van der Riet et al., 2019). Employing additional methods to measure and track behavioral changes is crucial for determining the intervention's effectiveness in improving SRH practices. The AS materials did not fully address complex issues such as power imbalances in relationships and systemic issues related to HIV disclosure (Van der Riet et al., 2019). Expanding the content to cover these critical aspects can provide more comprehensive support for addressing SRH concerns.

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South Africa's legal framework allows adolescents significant autonomy in accessing SRH services, such as HIV testing and contraceptives, reflecting a progressive stance on adolescent rights. The legislation covers a range of SRH services, including abortion, which supports adolescents' access to essential health services independently. By distinguishing SRH services from general medical treatment, the legislation allows for specialized regulations that cater to the unique needs of adolescents. Discrepancies between laws such as the Sexual Offences Act and the Children's Act create legal ambiguities, especially concerning age of consent and sexual activity. These inconsistencies may lead to legal uncertainties and potential punitive measures for adolescents. The requirement for adolescents to demonstrate 'sufficient maturity' introduces subjective assessments. The lack of clear, standardized guidelines for evaluating maturity can lead to inconsistent application and potential barriers in accessing services.

These legal inconsistencies emphasize the dichotomy between ensuring teenagers' access to critical SRH services and protecting their rights in a complex legal environment. While the legislation's goal is to allow adolescents to make educated health decisions, variations in the laws may unintentionally impair this autonomy. To solve these difficulties, authorities must integrate the numerous laws to develop a more coherent framework that includes clear standards for both service providers and adolescents, ensuring that young people's rights are protected without additional impediments. Public policy requirements for specific services, such as HIV testing, can add complexity and potentially delay availability. These regulations must be simplified to remove impediments. These requirements need to be streamlined to reduce barriers. The current legal framework may not adequately address emerging SRH interventions, such as new HIV prevention methods. Regular updates and adaptability are crucial to incorporate these advancements.

Obligations for healthcare providers to report certain behaviours or relationships could deter adolescents from seeking SRH services due to fear of legal repercussions or social stigma. ***The VUKA Family Program*** effectively adapts existing models to address the unique needs of HIV-positive adolescents through culturally relevant materials and a structured curriculum. The program demonstrated significant improvements in ART adherence, HIV treatment knowledge, and caregiver-child communication, indicating its effectiveness. The intervention facilitated the development of social support networks and improved communication between caregivers and children about sensitive topics.The small number of participants (74 families) may limit the generalizability of the findings. This small sample size affects the statistical power and may not represent the broader population of HIV-positive adolescents. The use of self-reported measures for ART adherence includes possible biases, such as social desirability or recall difficulties, which might reduce the accuracy of reported results. The VUKA program's long-term influence cannot be captured by assessing outcomes immediately after intervention. Long-term follow-up is required to determine the long-term impact on adherence, mental health, and family relationships. Scaling up the program may pose resource, staff, and cultural adaption issues. The viability of administering the intervention in various settings requires more investigation. The possibility of selection bias, in which families that volunteered were more motivated or had more resources, could have an impact on sample representativeness.

The scoping review by Isaacs et al. (2024) evaluates the effectiveness of ***mobile Health (mHealth) interventions*** aimed at improving the uptake of sexual and reproductive health (SRH) services among adolescents. The review synthesizes findings from a range of mHealth strategies, including text messaging programs, app-based solutions, and SMS-based educational campaigns, to assess their impact on SRH knowledge and behaviors. Despite improvements in SRH knowledge, many mHealth interventions have shown mixed results in achieving sustained behavioral changes. Specifically, increases in contraceptive use did not always translate into improved condom use or broader changes in sexual health practices. This suggests a need for integrating behavior change models into interventions to bridge the gap between knowledge and action.

Privacy concerns appeared as a significant obstacle, especially when teens share devices or are concerned that others will view their messages. Addressing these privacy concerns is critical to the efficacy and acceptance of mHealth therapies. Participants experienced hurdles such as restricted mobile phone availability, difficulty obtaining phone credits, and inadequate internet connectivity. These technological hurdles can prevent teenagers from fully engaging with mHealth therapies. Cultural sensitivities made it difficult for certain treatments to ensure content relevancy. Inadequately addressing culturally sensitive themes might diminish intervention efficacy and leave unmet needs needs.

The review identified a shortage of attention on LGBTIQ+ adolescents, indicating a serious gap in the inclusion of mHealth SRH initiatives. The lack of of tailored interventions for varied sexual orientations and gender identities underscores the need for more comprehensive and inclusive methods. The majority of research focused on short-term results, which may not accurately reflect the long-term influence of mHealth interventions on behaviours and sustained SRH practices. Long-term evaluations are required to determine the long-term impact and effectiveness of various interventions.knowledge enhancement is clear, evidence-based behaviour change techniques must be integrated into mHealth programs. This integration can aid not only in knowledge acquisition but also in actual behavioural changes. The potential of advanced technologies such as AI and chatbots to improve mHealth treatments has yet to be fully explored. These tools could provide personalized help and real-time feedback, thereby enhancing engagement and efficacy.

The identified gaps across the interventions highlight the importance of addressing sample size limitations, technology access, privacy concerns, gender dynamics, contextual relevance, and behavioural change measurement. Future research and interventions can improve their effectiveness and impact, ensuring that they better meet the needs of the target populations and contribute to meaningful advancements in sexual and reproductive health.

Chapter 6: Limitations, Recommendations, and Conclusions

6.1 Limitations of the study

The scoping review focused primarily on interventions that were either well-documented or prominent in the South African context. This may have excluded less-reported or innovative programs that could offer valuable insights into sexual health promotion for young people.

While the study utilized a range of databases and followed systematic procedures, the quality of the included studies varied. The use of diverse methodologies and reporting standards among studies may have impacted the consistency and comparability of the results. Many of the studies included in the review had short follow-up periods, which limits the ability to assess the long-term effectiveness and sustainability of the interventions. This is particularly relevant for behavioural changes which may take time to manifest.

Some studies had small sample sizes or were conducted in specific settings, such as urban areas, which may not be representative of the broader South African population. This limits the generalizability of the findings to different regions or demographic groups. The effectiveness of mHealth interventions may be influenced by technological barriers such as limited access to mobile phones or internet connectivity, which can affect the generalizability of these interventions to less resourceful areas. Some interventions faced challenges related to cultural sensitivity and relevance, which may have affected their effectiveness. The review did not extensively cover how the interventions addressed or incorporated cultural factors. The review identified a notable gap in addressing the sexual health needs of LGBTIQ+ youth. This exclusion may limit the comprehensiveness of the findings and recommendations.

Privacy issues were highlighted as a significant concern in some interventions, especially with mHealth approaches. The review did not extensively explore how different interventions managed these concerns.

6.2 Recommendations for future research

Future research should aim to include a wider range of interventions, including those that may not be as well-documented but could provide novel insights. This includes exploring community-based and less conventional approaches. There should be an emphasis on improving the methodological rigor of future studies, including adopting standardized evaluation criteria and employing robust research designs to ensure high-quality data. Researchers should conduct longitudinal studies to assess the long-term impact of interventions on sexual health behaviours and outcomes. This would provide a clearer picture of the sustainability and effectiveness of these programs over time.

Future studies should aim for larger and more diverse samples that reflect the varied demographics of South Africa. This includes targeting both urban and rural populations to enhance the generalizability of findings. mHealth interventions should consider technological limitations and explore solutions to ensure broader accessibility augmented by strong privacy protections to address concerns about confidentiality. including secure platforms and educating participants about privacy measures. Furthermore, developing low-tech or offline options to reach populations with limited internet access may prove to be beneficial. Interventions should be designed with cultural sensitivity in mind, incorporating local norms and values to enhance relevance and effectiveness. Engaging community stakeholders in the development process can help address cultural issues. Additionally future interventions should specifically target LGBTIQ+ youth, addressing their unique needs and challenges. This would ensure a more inclusive approach to sexual health promotion.

6.3 Conclusion

The scoping review provides valuable insights into the landscape of sexual health interventions for young people in South Africa. It highlights several effective strategies, including the IMARA-SA program and the InTSHA mHealth intervention, which have shown promise in improving sexual health knowledge and behaviours. However, translating knowledge into sustained behavioural changes remains a challenge.

Key gaps identified include the need for long-term evaluation of interventions, greater inclusivity of LGBTIQ+ youth, and addressing technological and cultural barriers. Privacy concerns also emerged as a significant issue, particularly in mHealth interventions.

To advance the field, future research should focus on enhancing the methodological quality of studies, exploring diverse and innovative intervention approaches, and ensuring interventions are culturally sensitive and inclusive. By addressing these limitations and implementing the recommended strategies, researchers and practitioners can better support young people's sexual health needs and improve outcomes in the South African context.

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Appendix 1: Ethics Review Exemption

UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

14 September 2022

Miss Vongai Lee - Ann Mafongoya (217052695)
School Of Applied Human Sc
Howard College

Dear Miss Vongai Lee - Ann Mafongoya,

Original application number: 00018294
Project title: An overview of interventions to promote sexual health amongst young people in South Africa: a scoping review.

Exemption from Ethics Review

In response to your application received on 13 July 2022 , your school has indicated that the protocol has been granted **EXEMPTION FROM ETHICS REVIEW.**

Any alteration/s to the exempted research protocol, e.g., Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through an amendment/modification prior to its implementation. The original exemption number must be cited.

For any changes that could result in potential risk, an ethics application including the proposed amendments must be submitted to the relevant UKZN Research Ethics Committee. The original exemption number must be cited.

In case you have further queries, please quote the above reference number.

PLEASE NOTE:
Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours sincerely,

[redacted]

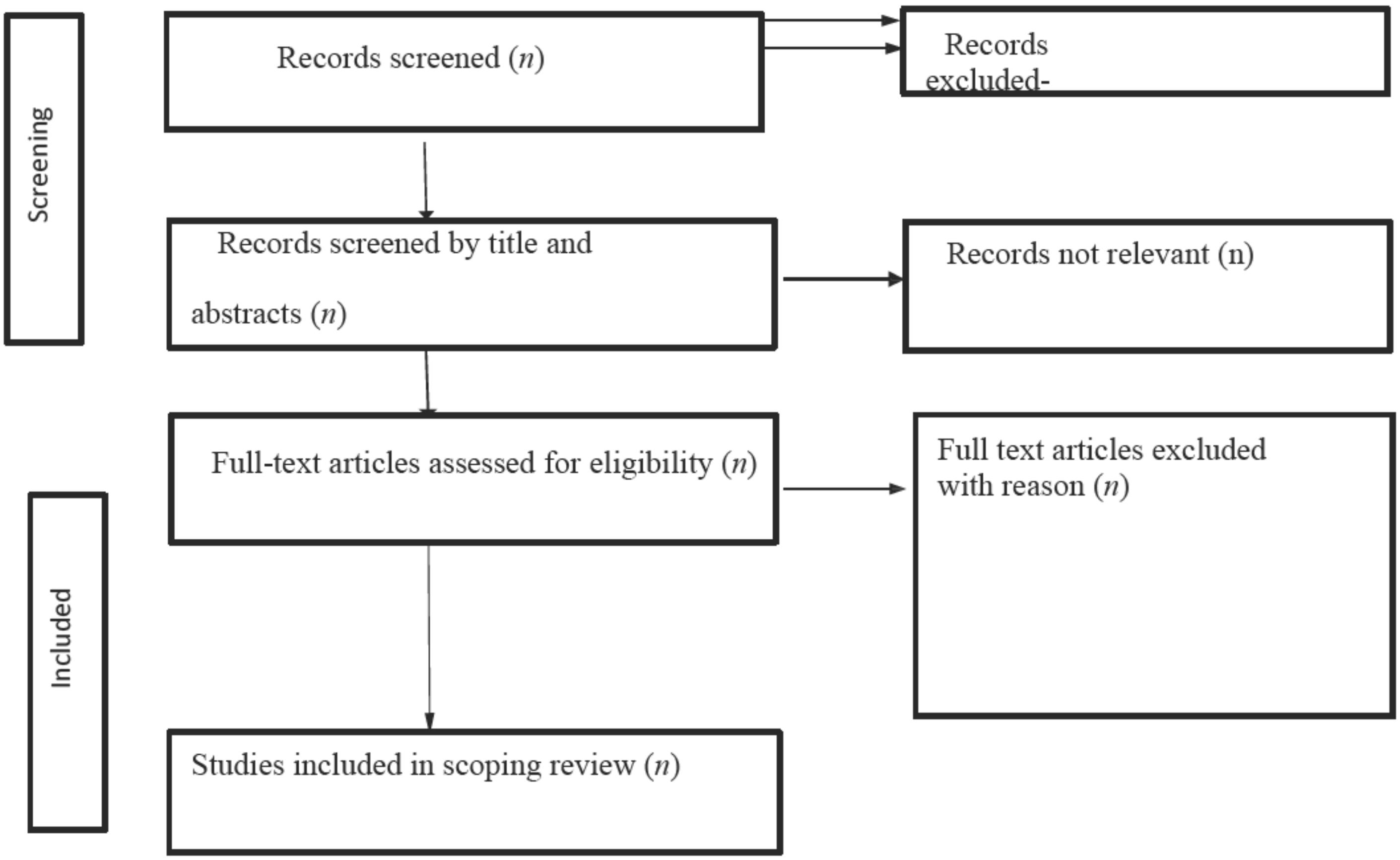
Johanna Hendrina Buitendach
Academic Leader Research
School Of Applied Human Sciences

Appendix 2: Mixed Methods Appraisal Tool (MMAT), version 2018

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?				
	S2. Do the collected data allow to address the research questions?				
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5. Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Hong et al. (2018)

Appendix 3: PRISMA Flow Diagram for the Scoping Review Process



Peters et al. (2015)

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To whom it may concern

This is to confirm that I, Craig B.B Gumbo, edited the language research report

A scoping review of interventions to promote sexual health amongst young people in South Africa

by

VL MAFONGOYA

The onus is on the author to attend to the suggested changes.

Furthermore, I do not take responsibility for any changes in the document after the fact.

[redacted] 17/03/2025

CRAIG B.B GUMBO **DATE**