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An exploration of the determinants of sexual risk behaviour among adolescent girls and young women aged 15-24 years in South Africa: a sub-study of the 2019-2022 HERStory2 study

A mini dissertation [PPH 7015W] submitted in partial fulfilment of the requirements for the Master of Public Health (Division of Social and Behavioural Sciences) degree, School of Public Health and Family Medicine, Faculty of Health Sciences

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DECLARATION

I, ……**PAIDASHE CHAMUKA**……, hereby declare that the work on which this dissertation/thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I empower the university to reproduce for the purpose of research either the whole or any portion of the contents in any manner whatsoever.

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Dedication

I wish to dedicate this thesis to the memory of my beloved parents, Agatha and Mushovorwa Chamuka, who are no longer with us. Your strong belief in education fuelled me through this journey. To all my seven siblings you are greatly appreciated for your unwavering support. Mbeu-Lowen and Shamiso I love you.

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List of Acronyms

AGYW	Adolescent girls and young women
HIV	Human Immunodeficiency Virus
IDIs	In-depth Interviews
PrEP	Pre-Exposure Prophylaxis
HREC	Human Research Ethics Committee
SAMRC	South African Medical Research Council
SRH	Sexual and Reproductive Health
SSA	sub-Saharan Africa
STIs	Sexually Transmitted Infections
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund

Abstract

South African AGYW engage in sexual risk behaviour, for example, unsafe sex, transactional and inter-generational sexual relationships. Sexual risk behaviour results in adverse sexual and reproductive health (SRH) outcomes, including HIV, sexually transmitted infections (STIs), unplanned pregnancies and forced sex. The purpose of this study is to explore the perspectives of adolescent girls and young women (AGYW) and community stakeholders about why South African AGYW may engage in sexual risk behaviour. Understanding the perspectives of AGYW and the viewpoints of community stakeholders, is pivotal for enhancing future interventions intended to lower the risk of STIs including HIV and unintended pregnancies for AGYW. The study is based on the qualitative component of the HERStory2 study, a mixed-methods evaluation of an SRH intervention for AGYW in six South African districts. Data from in-depth interviews with twenty-seven participants were thematically analysed using the social-ecological model as a theoretical framework. The findings showed that the reasons for AGYW's engagement in sexual risk behaviour are nested within individual, interpersonal, community, and structural levels. At the individual level, participants reported that AGYW may engage in sexual risk behaviours due to their age, low perception of risk, problematic alcohol consumption, and the need for high grades at school. At the interpersonal level, social media-induced peer pressure was cited as a reason for AGYW's engagement in sexual risk behaviours. Community-level factors included lack of safety and economic activities such as mining. At the structural level, poverty, negative attitudes from public healthcare providers at clinics, and social and gender norms were perceived to influence AGYW's sexual risk behavior. The results suggest that AGYW's sexual risk behaviour is influenced by many complex factors beyond the individual. The results call for targeted holistic interventions to reduce sexual risk behaviour and improve the SRH outcomes for AGYW in this high HIV burden context.

Keywords

HIV, adolescent girls, young women, sexual risk behaviour, adverse SRH outcomes, South Africa.

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PART A: RESEARCH PROTOCOL

Introduction

Background and context

AGYW aged between 15 and 24 years in sub-Saharan Africa (SSA), including South Africa, engage in sexual risk behaviour [1]. Sexual risk behaviour refers to unprotected sexual intercourse with non-use, incorrect use, or inconsistent use of condoms, pre-exposure prophylaxis (PrEP) and contraceptives [2,3]. This behaviour can be related to transactional, inter-generational and multiple concurrent relationships [2–4]. It also includes early sexual debut, having sex after drug or alcohol use, as well as non-consensual sexual intercourse [4–7].

Sexual risk behaviour results in adverse sexual reproductive health outcomes including HIV and other sexually transmitted diseases (STIs) such as gonorrhoea, syphilis and chlamydia, and unwanted pregnancies and unsafe abortions [8–10]. Although HIV is generally declining globally, statistics show that about 4000 AGYW are infected with HIV weekly, and about 200,000 new infections are recorded every year [11,12]. In South Africa, about 150 AGYW are infected with HIV daily [11]. AGYW account for a third of all new infections [13,14].

STI rates are generally high in South Africa, with more than 1.5 million new cases of gonorrhoea and chlamydia recorded in 2017 [15]. In South Africa, 650,000 adolescent pregnancies were recorded during the period 2017 – 2021, and some resulted in unsafe abortions [16]. Although the actual number of AGYW's illegal abortions is not known, evidence shows a significant prevalence of illegal abortions in South Africa [17–19].

Despite significant efforts in South Africa to address sexual risk behaviour through awareness campaigns, HIV testing services, PrEP and post-exposure prophylaxis, and behaviour change communication [20,21], HIV incidence and other adverse SRH outcomes remain high [1]. This research aims to explore why sexual risk behaviour persists among AGYW despite longstanding efforts. Using the social-ecological model, it examines the perspectives of AGYW and community stakeholders, including health workers, community leaders, intervention facilitators, social workers, male peers, and partners. Understanding these

viewpoints is crucial for improving interventions to reduce the risk of STIs, HIV, and unintended pregnancies among AGYW.

Concept clarification

In framing risk for this sub-study, the researcher was guided by the work of Shoveller & Johnson (2006) on the discourse surrounding youth sexual health, focusing on notions of risky groups, risky behaviour, and risky persons. Using the word 'risky' tends to stigmatise and marginalise specific populations and it overlooks complex social dynamics by associating specific groups with risky behaviour [22]. Furthermore, 'risky' behaviour implies individuals' fixed characteristics [22]. Again, using such terminology fails to encompass the diverse contexts of the underlying social, economic, and structural factors that influence vulnerabilities and affect agency, resulting in such behaviour [22]. In this study, the researcher is shifting from a discourse that blames and categorises AGYW as 'risky' to a more nuanced understanding of individual and broader contextual perspectives of why AGYW engages in behaviour associated with risk. As a result, instead of using the phrase 'risky sexual behaviour' as used by many researchers, this sub-study uses the phrase 'sexual risk behaviour'. This approach is comprehensive as it considers the social inequalities, power dynamics and other broader social and cultural factors that play a significant role in shaping and influencing the sexual behaviour of AGYW.

Rationale and significance of the study

AGYW's sexual risk behaviour has received significant attention over the years due to its persistent contribution to adverse SRH outcomes. It is, therefore, critical to explore the different perspectives of AGYW and community stakeholders on why AGYW in South Africa engage in sexual risk behaviour. Understanding the perspectives about sexual risk behaviour among AGYW is vital in developing context-specific strategies that can help reduce sexual risk behaviour and, ultimately, adverse SRH outcomes.

In addition, patterns of sexual behaviours during adolescence may influence sexual behaviour in adulthood [23]. This means that if such dynamics are understood, this may assist in coming up with long-term efforts against HIV and other adverse SRH outcomes. AGYW's sexual behaviour is of public health significance because they may have limited agency in negotiating safe sexual practices [24]. AGYW may be prone to social, behavioural, biological, and

structural vulnerabilities and power inequalities that impact their behaviour and limit their sexual agency [14,25,26].

Despite the evidence that sexual risk behaviour is prevalent among AGYW in South Africa, there is a scarcity of studies that explore the perspectives of AGYW and community stakeholders about why AGYW engage in sexual risk behaviour from a social-ecological perspective. This study will assist in understanding how the complex interactions between AGYW and the environment at different levels influence sexual risk behaviour. The study findings will critically contribute literature on the dynamics of sexual risk behaviour among AGYW in South Africa and beyond from a social-ecological perspective. Unlike previous studies, which focused only on two or three social-ecological levels, this study adopts a broader approach as it focuses on four levels: the individual, interpersonal, community and structural levels.

Methodologically, most studies on sexual risk behaviour in AGYW in South Africa have been quantitative [27–30]. This means there is a need for more qualitative analysis exploring perspectives on why AGYW engage in sexual risk behaviour. This research will, thus, add some qualitative literature to the subject under discussion [31].

Research aim

The study explores the perspectives of AGYW and community stakeholders in the study communities on why AGYW engage in sexual risk behaviour.

Objectives

The objectives of the study are:

a) To understand the factors that AGYW perceive to influence their engagement in sexual risk behaviour.
b) To understand the factors that AGYW perceive to influence other AGYW's engagement in sexual risk behaviour.
c) To understand the factors that community stakeholders perceive to influence sexual risk behaviour among AGYW.

Literature review

Introduction

Literature on why AGYW in South Africa and other countries may engage in sexual risk behaviour indicates that it is imperative not to only focus on the individual AGYW to understand behaviour. Instead, the focus should be on how AGYW interact with the broader environment. Before looking at the literature review in detail, the subsequent section focuses on the theoretical framework underpinning this study.

Theoretical framework

Over the years, several theories and models have been used in research on sexual behaviour. Some of these are the social learning theory and the reasoned action theory [32,33]. However, although they explain human behaviour, some have been criticised for only focusing on the individual's demographic variables and psychological characteristics and perceptions as determinants of sexual behaviour [33]. In fact, they tend to discount the influence of the broader environment in determining individual behaviour, yet a considerable amount of literature consistently shows that the broader environment also influences human behaviour [33,34].

Consequently, there has been a shift towards adopting a comprehensive multiple-level approach to understanding the determinants of human behaviour [34]. Therefore, this study is grounded in the social-ecological model, which is a systems theory-based model. The social-ecological model does not treat individuals in isolation but as embedded and nested in broader systems or the environment [33,34]. Furthermore, the model notes that the bidirectional dynamic interactions between the individual and the environment occur across time and space. Thus, human behaviour is influenced by and influences the environment [34,35]. However, this study is interested in establishing the reasons at both the individual and multiple environmental levels that influence sexual risk behaviour in AGYW. Modifications have been made to the social-ecological model depending on the study one is undertaking [33]. Some researchers adopt a model with five levels, others with four levels and others with three. For this study a model with four levels was selected because they best suited the secondary data available and provided the most interesting analysis of the data. The four levels in the model are;

Individual level

The individual level characteristics, including knowledge, perceptions, and skills, help influence sexual risk behaviour.

Interpersonal level

These include formal and informal personal relationships, including support systems available to the individual, that is, family, friends, peers and intimate partners as the latter may influence sexual risk behaviour.

Community level

These include the social grouping in the neighbourhood among people who share the same interests. The interests include economic activities in an area, such as mining, alcohol and substance abuse, which influence sexual risk behaviour.

Structural level

These include the structural factors that influence sexual risk behaviour, like social norms that make AGYW vulnerable, unemployment, and poverty.

Based on the theoretical framework above, this section provides a brief thematic literature review of the study on why AGYW may engage in sexual risk behaviour and is divided into the following four themes: the individual level, the interpersonal level, the community level and the structural level.

Individual level

Knowledge, information and age may influence AGYW to engage in sexual risk behaviour.

Knowledge and information

Comprehensive knowledge and information about specific risk factors, such as unsafe sex, including in transactional and inter-generational relationships and partnerships and the related adverse SRH outcomes, are vital in reducing sexual risk behaviour [36]. Comprehensive knowledge and information are essential because they increase personalised risk perception in AGYW [36–38]. Increased personal risk perception may assist in reducing sexual risk behaviour and thus promote safe sex [39]. On the other hand, inadequate knowledge and information about specific risk factors can lead to low personalised risk perception [36]. Low personalised risk perception is associated with sexual risk behaviour [36–38]. Furthermore, a lack of comprehensive knowledge and information can lead to misinformation, resulting in the person not using approved services and taking protective measures to enhance safety. In a study on PrEP use in South Africa, [40] noted that when a lack of information is combined with misinformation, the targeted population usually resists adopting approved interventions meant to enhance safe sex, resulting in engaging in sexual risk behaviour.

Age

Since AGYW are disproportionately affected by HIV, age arguably determines sexual risk behaviour [41–44]. Adolescence marks a crucial transitional stage of development [45–47]. The period encompasses the biological transitions of puberty and sexual exploration. It is also associated with the need for independence and preoccupation with the self or identity formation and normative experimentation [46,48]. Normative experimentation is commonly associated with sexual risk behaviour because of curiosity and insufficient experience in negotiating for safe sex, particularly with older intimate partners [13,49,50]. Additionally, normative experimentation may increase sexual risk behaviour as some AGYW may engage in sexual activity while under the influence of alcohol or drugs, impairing their judgement regarding safe sexual practices [51–53].

Inter-personal level

These include formal and informal social networks with family, friends or peers [54] and sexual partners [55]. Social networks influence the social identity of AGYW not only through the provision of resources, for example, emotional, financial, and material support and information but also by determining AGYW's access to new circles or contacts and the roles they will assume [54]. Male sexual partners play a critical role in influencing the sexual health risks faced by AGYW [55]. Engaging in unprotected sex, multiple concurrent partnerships, and age-disparate relationships with these men increases AGYW's vulnerability to sexually transmitted infections, including HIV [55].

Family

The family plays a crucial role, especially concerning sex education and socialisation [56]. By sharing explicit and implicit messages and being role models, parents, guardians, or older siblings provide an essential foundation for psychosocial development, which helps in shaping and enhancing sexual literacy, roles, meanings, ideas, beliefs, values, collective cultural symbols and sexual codes of conduct for AGYW which shapes sexual behaviour [27,57].

Existing research consistently shows that AGYW from integrated, well-connected, and supportive families with open communication on sexual topics are more inclined to participate in safe sexual practices in contrast to those without such family dynamics [57,58]. On the other hand, AGYW from unstable and disintegrated families with limited sexual communication and poor parental supervision are prone to engaging in sexual risk behaviour [56]. In South Africa, there are many barriers to adolescent-parent sexual communication, including restrictive socio-

cultural precepts and parents' fear of encouraging their daughters to be promiscuous, leaving the AGYW exposed to sexual risk behaviour [58].

Peers

Peers may influence sexual behaviour negatively through peer pressure [55]. The desire to belong to a particular clique, seek peer approval, achieve and maintain trending modern lifestyles, financial freedom, luxury, glamour, and prestige may result in sexual risk behaviour [59–61]. AGYW may enter into transactional sexual relationships with multiple male partners to achieve and maintain a particular lifestyle [59,61,62]. One of the dangers of transactional sexual relationships is the reluctance of men to have protected sex, increasing the chances of experiencing adverse sexual and reproductive health outcomes [63–66].

Community-level

Sexual risk behaviour can be influenced by the community or neighbourhood in which AGYW live. A particular community's social and economic activities can influence sexual risk behaviour [30,67,68]. AGYW living in a disadvantaged neighbourhood with social disorganisation along with high sexual and substance abuse activities are more prone to engaging in sexual risk behaviour [30,67,68]. In the same vein, economic activities such as mining are linked to sexual risk behaviours including unsafe sex, sexual violence, sexual exploitation and substance abuse [69–71]. Several studies show a higher prevalence of HIV and other adverse SRH outcomes in mining communities. Economic activities and industries can impact communities through the movement of people. In this example the influx of predominantly male miners increases demand for sex work, which heightens the exposure of AGYW to sexual risk behaviours and sexually transmitted infections, including HIV [72–74]. The AGYW in these communities, especially those from disadvantaged backgrounds, may engage in sex with men to survive [72]. In the same manner, those who want glamour and to maintain a particular lifestyle sponsored by men are prone to engaging in sexual risk behaviour [67].

Structural-level

These include structural factors influencing sexual risk activities. The factors discussed in this section which emerged from data include poverty and gender norms.

Poverty

Poverty significantly heightens the likelihood of HIV transmission [75–77]. Individuals living in poverty are prone to engaging in sexual risk behaviours. The behaviours include multiple

sexual partners, transactional and intergenerational sexual relationships, let alone staying in sexual relationships with violent intimate partners [76–78].

AGYW from poor economic backgrounds often drop out of school because of a lack of resources, which limits their competitiveness in the job market [28,79]. Again, they are often expected to fend for themselves and their families from a young age [28]. Lack of academic education reduces the chances of AGYW getting better-paying jobs [80]. In order to survive, some AGYW end up depending financially on men. Relying economically on men increases vulnerability and risk of sexual abuse and exploitation as AGYW find more difficult to negotiate safe sex [62,64,81]. In addition, economic dependence on men restrains AGYW's ability to leave relationships that expose them to the risk of adverse SRH outcomes [62,81,82].

Gender norms and power structures

Gender norms are the "deeply entrenched and widely held beliefs about gender roles, power relations, standards or expectations that govern human behaviours and practices in a particular social context and at a particular time" [83]. "They sustain a hierarchy of power and privilege that typically favours what is considered male or masculine over that which is female or feminine, reinforcing a systemic inequality that undermines the rights of women and girls and restricts the opportunity for women" [83]. Literature shows that gender norms influence AGYW to engage in sexual risk behaviour significantly in several ways.

First, attempts to practice safe sex by AGYW are often met with negative reactions from society and intimate partners. Ordinarily, due to gendered power dynamics, men dominantly wield more power in sexual decision-making [84,85]. As a result, AGYW often find it difficult to negotiate safe sex, such as using condoms or PrEP [86,87]. More importantly, within some South African social and cultural value systems, AGYW, due to their young age, are expected to be sexually chaste, pure virgins ignorant of sexual matters [31]. Such systems can lead to a lack of comprehensive sexual education, leaving AGYW ill-equipped to make informed decisions about their sexual health [31]. This ignorance, coupled with pressure to conform to these expectations, can drive AGYW to engage in risky sexual behavior secretly and without proper protection, increasing their vulnerability to sexually transmitted infections and unintended pregnancies [31]. [31,84]

Additionally, research conducted in South Africa and Zimbabwe on PrEP confirmed that the use of PrEP by AGYW is associated with stigma from their sexual partners [86–89]. Although PrEP is effective in HIV prevention, its use is often associated with living with HIV, promiscuity, and sex work [84]. Such labels carry consequential social harm in AGYW and the fear of abandonment by their sexual partner(s) [86,87]. Sometimes AGYW experience physical violence and rape from their intimate partner if they insist on safe sex [87]. To fulfil the good girl image and purity notions, to please and retain their partners, AGYW may engage in sexual risk behaviours [88,89].

Secondly, keeping girls in school is intricately linked with gender norms. Gender norms discriminate against girls regarding schooling and educational opportunities from a young age [90]. Studies globally show that keeping girls in school decreases their susceptibility to HIV and other adverse SRH outcomes [91–93]. Going to school helps to delay sexual debut among girls through school-based sexual health interventions, and this allows girls to mature and adopt safer sexual practices [92–94]. Equally, girls in school have a smaller sexual network coupled with time constraints to venture into sexual activities than those who dropped out [95]. Similarly, being in school reduces the chances of child marriages and other SRH outcomes among AGYW [91,96].

A study examining the connection between school attendance and HIV transmission showed that dropping out of school heightened the vulnerability of adolescent girls to HIV infection as they become more prone to engaging in sexual activities at a younger age [95]. Another study established that keeping a child in school for an extra year reduces chances of getting HIV by 7 per cent due to delayed sexual debut [97]. Many studies also show that keeping girls in school reduces teenage pregnancies [96,98,99]. A spike in adolescent pregnancies observed during the COVID-19 lockdown when students were not going to school supports that keeping girls in school reduces teenage pregnancy [100–104].

Education is an essential structural intervention in determining sexual behaviour [105]. It enhances behaviour change by shaping socio-cognitive aspects through providing knowledge and information, shaping AGYW's perceptions, beliefs, and attitudes [105,106]. For example, education equips AGYW with information regarding STI transmission including HIV, methods of pregnancy prevention and where to access SRH services. It enhances the ability of AGYW to comprehend promotional messages meant to enhance safe sexual behaviour [105–107]. In

other words, their health skills are enhanced [108]. AGYW without education may lack information to enhance behaviour change, have fewer health skills, and are likelier to engage in sexual risk behaviour compared to their educated counterparts [105].

Similarly, previous studies established that AGYW who are less educated have little to no perceived and actual power to enhance safe sex than those with higher education [105]. Highly educated women may be more assertive, have higher autonomy in sexual relationships, and can negotiate safe sex as well as visit healthcare facilities to get SRH services, compared to those with little to no education [105]. AGYW with no or little education are less assertive, have low autonomy, and are prone to engage in sexual risk behaviour [96,105].

Research Methodology

Study design

The study design and research methods summarised in this section were extracted from the HERStory2 study. In 2020 and 2021, with funding from the Global Fund, the South African Medical Research Council and stakeholders evaluated a combination HIV prevention intervention programme in six South African districts [109]. The evaluation is known as the HERStory2 study. The evaluation employed both quantitative and qualitative study designs. It assessed whether the combination HIV prevention intervention programme was being carried out as planned and whether the implementers were on track to meet the programme objectives [109]. It also investigated the contextual elements influencing the intervention implementation and AGYW recipients' and stakeholders' knowledge, perceptions and acceptability of the interventions [109].

This sub-study is based on the HERStory2 qualitative component. The qualitative evaluation component used in-depth interviews (IDIs) conducted remotely with AGYW and community stakeholders in the communities under study. The data analysed in this sub-study was already transcribed and focused on sexual risk behaviour among AGYW. Qualitative research and IDIs help to explore the perspectives of AGYW and community stakeholders in the study communities about the dynamics of potential sexual risk behaviour.

Study Population and Setting

The research population comprised AGYW aged between 15 and 24 years who participated in the qualitative component of the HERStory2 study. AGYW were not sampled based on their reporting of engaging in sexual behaviours, including risk behaviours. Most of the AGYW who

participated in the study shared perspectives and perceptions on why other AGYW engage in sexual risk behaviours rather than discussing their own experiences. We do assume though that some of them would have been sexually active and would have been reflecting on their own behaviours. The study sample also included community stakeholders such as health workers, social workers, community leaders, intervention facilitators and other community stakeholders in the study communities who shared their perspectives on why AGYW engage in sexual risk behaviours. The HERStory2 study was conducted in 12 districts in provinces across South Africa [109].

The data for this sub-study was collected from participants drawn from 6 districts in 6 provinces, namely, Klipfontein, Cape Town (Western Cape), King Cetshwayo (KwaZulu-Natal), Ehlanzeni (Mpumalanga), Bojanala (North West), Nelson Mandela Bay (Eastern Cape), and Thabo Mofutsanyana/Dihlabeng (Free State). These districts and provinces are known for high HIV and STI incidences, adolescent pregnancies and gender-based violence [109].

Sampling

Purposive sampling was employed in selecting participants from the selected study sites in the main study. Participants were randomly picked from four schools and four community settings within the six districts. The district research sites are as follows: Nelson Mandela Bay (Eastern Cape Province), Klipfontein (Western Cape Province), Thabo Mofutsanyana (Free State Province), King Cetshwayo (KwaZulu-Natal Province), Ehlanzeni (Mpumalanga Province) and Bojana (North West Province) [110].

Inclusion criteria

- AGYW who were direct recipients of the HERStory 2 intervention.
- AGYW who took part in the HERStory2 study and shared insights into the reasons why they or other AGYW engage in sexual risk behaviour.
- Community stakeholders who participated in the HERStory2 study and spoke about why AGYW may engage in sexual risk behaviour.

Exclusion criteria

- AGYW who did not participate in the intervention.
- AGYW who participated in the HERStory2 study and did not discuss why they or other AGYW may engage in sexual risk behaviour.

- Community stakeholders who participated in the HERStory2 study but did not speak about sexual risk behaviour.

It is crucial to highlight that only the data from participants who discussed the reasons behind AGYW engaging in sexual risk behaviour were included in this study.

Data collection

For the HERStory2 study, a trained team of female researchers fluent in the site languages collected the data [109]. This sub-study analysed twenty-seven in-depth interviews (IDIs) conducted via telephone with participants. They comprised seven AGYW core intervention recipients, two AGYW biomedical intervention recipients, four healthcare workers, six intervention facilitators, four social workers, two community leaders and two male peers and partners. One advantage of IDIs is that they use open-ended questions. These are appropriate in exploring participants' perspectives on why AGYW engage in sexual risk behaviour. Sexual behaviour is a complex and difficult-to-understand phenomenon [110]. IDIs help contextualise and interpret such complex phenomena using probes and follow-up questions[111]. This provides detailed and thick descriptions of the beliefs, views, opinions, and experiences of the AGYW, which helps to understand why they engage in sexual risk behaviour [112]. Remote or telephone IDIs provide a greater sense of anonymity especially if participants do not have to meet the researcher face-to-face [113]. The absence of physical presence can reduce the perceived pressure or judgment, allowing participants to speak more freely and honestly about their experiences. Furthermore, remote IDIs were appropriate since the primary study was conducted during COVID-19, when gatherings were prohibited, allowing the research to proceed. The interviews were recorded in audio format with the participants' consent.

Data safety and management

The data collected from the twenty-seven anonymised participants was received from the Principal Investigator electronically. The data was stored in 3 hard drives: a laptop, an external hard drive, and a flash drive. Backups were done on One Drive and Google Drive, and a strong password was created to protect all of them. There is no intention to make any hard copies.

Each participant was given an identification number instead of actual names. All the raw data will be wholly disposed of from all storage sites and devices one year after submitting the research report and publishing the journal article.

Data analysis

The data will be systematically analysed thematically using Braun & Clarke (2006) six-stage framework. The analysis will be done manually. The six stages are as follows:

i. Familiarisation with data

The researcher will actively read the data repeatedly before coding. This is done to look for meanings and patterns. A list of ideas of interest and relevance to the coding process will be noted. Theoretical and reflective thoughts will be written down [115]. The raw data will then be organised for ease of reference [115].

ii. Generate initial codes

The initial codes are produced manually by systematically organising the data into meaningful groups [114]. Coding will be theory-driven. Highlighters will be used to show data with similar patterns and develop as many codes as possible [115].The researcher that the codes have explicit boundaries to avoid overlaps. He will use thematic networks to understand the meanings of texts, explore the established themes, and identify underlying patterns [116]. During the coding process the researcher will debrief with the co-supervisor who participated in the HERStory2 project as a form of peer debriefing. The researcher will have an audit trail to track the emerging meanings from the data and how they are related [115].

iii. Search for themes

This phase entails categorising and organising the relevant coded data extracts into themes [114]. A thematic network is used at this stage [116].

iv. Review themes

At this stage, the researcher will align the identified themes with the coded excerpts and data set. Any non-aligned initial codes and themes will be altered accordingly [116]. Themes will be made coherent by merging and collapsing others for relevance. A thematic map will be created that provides the true meaning of the whole data set [114]. Any emerging new themes will be added if needed.

v. Define and name themes

At this stage, complete themes will be developed by organising and defining those created from their meaning. The researcher will write a comprehensive analysis, elucidating the narrative

conveyed by each theme [114]. The stage also involves including the data extracts of each theme and arranging them into consistent accounts based on their meaning [115]. Thus, considerations are made about how each theme fits into the study [114]. A debriefing with the supervisory team will ensure that all the relevant data is analysed and interpreted correctly [115].

vi. Produce the report

During this phase, the researcher will compile the report for publication and submission to the University of Cape Town in fulfilment of the requirements for the Master of Public Health thesis. The researcher will go beyond simply reporting the description of the summarised codes and themes identified in the transcriptions. He will interpret the significance of the data by theorising the essence of the identified patterns and their broader meanings to literature [114]. The researcher will draw conclusions from the data.

Methodological considerations

This section focuses on rigour at the data analysis stage but excludes the data collection stage since this study relies on secondary data.

Rigour

Rigour is critical in qualitative research. It refers to the "degree to which research methods are scrupulously and meticulously carried out to recognise important influences occurring in the process of conducting the research" [117]. Rigour ensures that research findings are credible, transferable, confirmable, and dependable, enhancing the integrity and trustworthiness of the research process [117–119]. To ensure rigour during data analysis in this study, the researcher will adopt the following methods:

Credibility

Credibility refers to the confidence one can put in the truth or accuracy of the research findings [120]. It determines whether research findings are believable and whether the data is correctly interpreted [121]. This study will ensure credibility through prolonged engagements and repeated analysis of the transcripts to correctly interpret the perspectives of AGYW and community stakeholders on why AGYW may engage in sexual risk behaviour. Some of the responses will be quoted verbatim. The researcher will also review the transcripts, checking for similarities across all participants. Finally, the researcher will discuss any issues with the

supervisors for clarity, given that the co-supervisor is the Principal Investigator of the HERStory2 qualitative component of the study.

Dependability
This refers to the stability of the research findings over time [120]. Data in this study will be analysed systematically, and themes will be established based on Braun & Clarke's (2006) six-stage framework: data familiarisation, generation of initial codes, search for themes, review of themes, definition of themes and production of the analysis report. Audits will also be carried out with the supervisory team.

Transferability
This is the generalisation of the research findings to other settings or contexts [115,120]. Much time will be spent studying the literature under discussion. Every aspect of the data analysis will be documented, and themes created [120]. The social-ecological model will guide the study and make it transferable to similar settings.

Conformability
This refers to the objectivity of the research, that is, the reliability of the information collected [119,120]. It can also be enhanced by applying the social-ecological model [122]. Reflexive notes will be made for introspections. [120,122]. A lookout will be made for pre-suppositions, beliefs, and biases so as not to interfere with the findings and the final report.

Reflexivity
Reflexivity is "a set of continuous, collaborative, and multifaceted practices through which researchers self-consciously critique, appraise, and evaluate how their subjectivity and context influence the research processes" [123]. The researcher is a middle-aged Zimbabwean man who recently moved to pursue his studies in South Africa. He heard stories about South African adolescent girls and young women getting pregnant so that they would benefit from the child grant given by the government. He also heard that AGYW wanted to party and drink alcohol. The researcher will keep these presumptions in check throughout this study so they do not interfere with the process, especially the final report.

Regarding participating in the main study, the researcher was not involved in the data collection process of the HERStory2 study and had no direct contact with the participants. The non-involvement of the researcher in the data collection process might prevent the researcher from

fully understanding the relevant research context to understand the findings. However, the researcher has access to study documents detailing the study. Again, he has access to the data transcriptions, which he can engage with to make sense of the findings. Furthermore, as mentioned above, the researcher's co-supervisor is the Principal Investigator of the HERStory2 qualitative study component, which informs this sub-study. She will help clarify some of the issues which might be unclear to the researcher.

The researcher envisions instances when he might get lost in the data. However, with continued engagement with the data, including some thick, well-detailed transcripts, the researcher will be able to make sense of the data. When he fails to do so, he will request clarity from the co-supervisor who participated in the primary research. The researcher also predicts that analysing data after not being part of the data collection team can be tedious. However, the researcher will use the opportunity to sharpen his research and imaginative skills during data analysis to develop relevant themes.

Ethical considerations

The HESRStory2 study received ethical approval from the South Africa Medical Research Council (SAMRC) Research Ethics Committee under reference number EC036-9/2020. In addition, the Faculty of Health Sciences Human Research Ethics Committee (HREC), at the University of Cape Town, formally registered the HERStory2 study under HREC REF 302/2023 and accepted the SAMRC HREC approval as the committee of note.

i. Informed consent procedures

Before enrolment, each eligible participant was informed in detail about the study using the most preferred language. Adolescents who were less than 18 years of age had to consent together with their parents or guardians. Participants who were 18 years and above gave consent on their own. The participants and their parents or guardians signed written consent forms.

ii. Voluntary participation

Participation in the study was voluntary.

iii. Confidentiality and anonymity

Unique identification numbers and not real names were used in identifying participants. This ensured confidentiality and anonymity.

Risk

Overall, participation in the study provided minimal risk. The narration of participating in sexual risk behaviour has the propensity to cause emotional and psychological harm to the participants since such behaviour is linked to adverse sexual and reproductive health outcomes. All standard ethical procedures were undertaken to minimise risk of psychological harm including referral to relevant support services and reporting if required.

Benefits

Participation in the HERStory 2 gave the AGYW a chance to self-introspect about sexual risk behaviour. Their participation also generated valuable empirical evidence in understanding the reason for their engagement in sexual risk behaviour. The evidence will assist in the development of intervention strategies to address the issues that may cause sexual risk behaviour in the AGYW.

Study budget

An amount of R500 was set aside for making bound hard copies of the thesis, which will be submitted to the Faculty of Health Sciences library at the University of Cape Town.

Period of the study and timeframe

The proposed study timeline is summarised in the chart below.

Study activity	August 2023	September 2023	October 2023	November2023	December2023	January 2024	February 2024
Study Protocol	X	X					
Literature review	X	X					

Data analysis		X	X				
Draft Journal Manuscript			X	X	X	X	
Draft submission					X	X	
Final Submission							X

Dissemination of results

Upon completion, the full version of this mini-thesis will be submitted in partial fulfilment for the Master of Public Health (Social and Behavioural Sciences track) degree offered at the University of Cape Town, South Africa. The results will also be shared with the HERStory2 study team at the South African Medical Research Council. A journal article will be submitted to a peer-reviewed journal for publication.

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PART B: JOURNAL MANUSCRIPT
(5171 Words)

Target Journal: ***Sexual and Reproductive Healthcare*** (Appendix 4)

Perspectives on sexual risk behaviour among adolescent girls and young women in South Africa: a qualitative study.

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Abstract

Objective

The study aims to understand why South African adolescent girls and young women (AGYW) engage in sexual risk behaviours, such as unsafe sex and transactional and inter-generational sexual relationships. These behaviours lead to adverse sexual and reproductive health (SRH) outcomes, including HIV, STIs, unplanned pregnancies, and forced sex. By exploring the perspectives of AGYW and community stakeholders, the study seeks to enhance future interventions aimed at reducing the risk of STIs, including HIV, and unintended pregnancies among AGYW.

Methods

The study is based on the qualitative component of the HERStory2 study, a mixed-methods evaluation of an SRH intervention for AGYW in six South African districts. Data from in-depth interviews with twenty-seven participants were thematically analysed using the social-ecological model as a theoretical framework.

Results

The findings showed that the reasons for AGYW's engagement in sexual risk behaviour are nested within individual, interpersonal, community, and structural levels. At the individual level, participants reported that AGYW may engage in sexual risk behaviours due to their age, low perception of risk, problematic alcohol consumption, and the need for high grades at school. At the interpersonal level, social media-induced peer pressure was cited as a reason for AGYW's engagement in sexual risk behaviours. Community-level factors included lack of safety and economic activities such as mining. At the structural level, poverty, negative attitudes from public healthcare providers at clinics, and social and gender norms were perceived to influence AGYW's sexual risk behavior.

Conclusion

The results suggest that AGYW's sexual risk behaviour is influenced by many complex factors beyond the individual. The results call for targeted holistic interventions to reduce sexual risk behaviour and improve the SRH outcomes for AGYW in this high HIV burden context.

Keywords

HIV, adolescent girls, young women, sexual risk behaviour, adverse SRH outcomes, South Africa.

Introduction

AGYW aged between 15 and 24 years in sub-Saharan Africa (SSA), including South Africa, engage in sexual risk behaviour [1]. Sexual risk behaviour refers to unprotected sexual intercourse with non-use, incorrect use, or inconsistent use of, condoms, pre-exposure prophylaxis (PrEP) and contraceptives [2,3]. This behaviour can be related to transactional, inter-generational and multiple concurrent relationships [2–4]. It also includes early sexual debut, having sex after drug or alcohol use, as well as non-consensual sexual intercourse [4–7].

Sexual risk behaviour results in adverse sexual reproductive health outcomes including HIV and other sexually transmitted diseases (STIs) such as gonorrhoea, syphilis and chlamydia, and unwanted pregnancies and unsafe abortions [8–10]. Although HIV is generally declining globally, statistics show that about 4000 AGYW are infected with HIV weekly, and about 200,000 new infections are recorded every year [11,12]. In South Africa, HIV disproportionately affects AGYW aged 15-24 years [1]. Approximately 150 AGYW are infected by the virus every week [11]. This is supported by high rates of STIs in this sub-population [13,14]. There are also many cases of unplanned pregnancies among AGYW [15–17].

STI rates are generally high in South Africa, with more than 1.5 million new cases of gonorrhoea and chlamydia recorded in 2017 [18]. In South Africa, 650,000 adolescent pregnancies were recorded during the period 2017 – 2021, and some resulted in unsafe abortions [19]. Although the actual number of AGYW's illegal abortions is not known, evidence shows a significant prevalence of illegal abortions in South Africa [20–22].
This study explores the perspectives of AGYW and community stakeholders who participated in the HERStory2 study regarding their understandings and beliefs about why AGYW may engage in sexual risk behaviour. Community stakeholders include health workers, community leaders, intervention facilitators, social workers, male peers and partners.

In this study, the phrase sexual risk behaviour is used instead of risky sexual behaviour. Although some literature uses the phrase 'risky sexual behaviour,' critics have argued that it carries connotations of blame, stigma, and marginalisation toward specific individuals for their behaviour. Using the word 'risky' overlooks complex social dynamics by associating specific groups with risky behaviour [23]. Thus, it excludes understanding the diverse contexts of the

underlying social, economic, and structural factors that influence vulnerabilities and affect agency, resulting in such behaviour [23]. This study shifts from a discourse that blames and categorises AGYW as 'risky' to a more nuanced understanding of individual and broader contextual perspectives of why AGYW engage in sexual behaviour associated with risk.

The social-ecological model is used to investigate why AGYW may engage in sexual risk behaviour. The model uses a comprehensive multiple-level approach to understand the determinants of human behaviour [24,25]. It emphasises that broader systems or the environment influence human behaviour rather than understanding it in isolation [24,25]. This study therefore uses the four levels of the social-ecological model, namely individual, interpersonal, community or context specific and structural level factors to explore the research question.

By adopting a comprehensive perspective aimed at understanding the perceptions of the participants regarding the reasons influencing AGYW's sexual risk behaviours, this study offers valuable insights about understanding the multifaceted factors at play. These insights, drawn from the experiences of AGYW, their viewpoints on other AGYW and the viewpoints of community stakeholders, could be pivotal for enhancing forthcoming interventions intended to lower the risk of STIs including HIV and unintended pregnancies for AGYW. This may ultimately enhance SRH outcomes within this specific sub-population.

Methods

This study is a secondary analysis of qualitative data from HERStory2, a larger parent study that evaluated a combination SRH intervention in six South African districts. Funded by the Global Fund, HERStory2 aimed to qualitatively examine the contextual factors influencing implementation and assess the perceptions and acceptability of the intervention among AGYW, beneficiaries, and other stakeholders. The study was conducted by the South African Medical Research Council (SAMRC) and other stakeholders [26].

The HERStory2 study did not solely focus on examining AGYW sexual risk behaviour. However, during the analysis of the data, one theme that emerged that warranted exploration was understanding perspectives of why AGYW in the study communities engage in sexual risk behaviours [26]. The results presented in this paper presents an analysis of a sub-set of the data that focused on this issue.

Study setting

Data for the HERStory2 study was collected from six out of the twelve districts where the intervention was rolled out across six provinces of the Republic of South Africa: Klipfontein in the Western Cape, King Cetshwayo in KwaZulu-Natal, Ehlanzeni in Mpumalanga, Bojanala in the North West, Nelson Mandela Bay in the Eastern Cape, and Thabo Mofutsanyana/Dihlabeng in the Free State. The intervention targeted these districts and provinces due to their high incidence of HIV, other STIs, adolescent pregnancy and gender-based violence [26].

Data collection

A team of trained female qualitative researchers fluent in the site languages collected data through individual in-depth interviews (IDIs) conducted over the phone. The discussions within the interviews were broad and included issues relating to AGYW lives, behaviour, and SRH more generally. While the research question being addressed in the paper were not necessarily explicitly focused on, issues of AGYW sexual behaviour and risk emerged in discussions, warranting the analysis included in this paper. The interviews were carried out in the participants' preferred language, audio recorded, transcribed and then translated into English [26].

Sampling

The analysis presented in this paper derives from interviews with a subset of twenty-seven AGYW and community stakeholder participants. This sample was purposively selected after assessing which interview transcripts included discussion relating to views on the reasons why AGYW participate in sexual risk behaviours and the adverse SRH outcomes they experience. The final sample included in this analysis comprised nine AGYW and community stakeholders who included, four health care workers, six intervention facilitators, four social workers, community leaders and two male peers and partners.

Data analysis

The data underwent systematic and thematic analysis by the researcher, following Braun and Clarke's (2006) six-stage framework. The first step, data familiarisation, was achieved by the researcher through repeated reading of the transcripts, leading to the second step of generating initial codes [27]. The researcher generated these codes by reading the transcripts line by line, comparing and identifying patterns, correlations, and repeated words, among other things. Step

three involved exploring themes by grouping the generated codes into sub-themes aligned with the theoretical model, research aim, and objectives [27]. The themes underwent review and adjustments were made in consideration of the entire dataset during step four, which involved reading the data that aligned with and supported each theme. During step five, the themes were defined and named. Step six involved a detailed analysis of each theme. The themes were summarised and interpreted in line with the study's aim and objectives, guided by the theoretical model. These findings were shared and discussed with the supervising team to enhance the consensual finalisation of the report.

Rigour was upheld during data analysis to ensure 'credibility, transferability, conformability, and dependability' [28–30]. The study's credibility was enhanced by prolonged engagement and analysis of the transcripts to make sense of the narratives given by AGYW and community stakeholders, quoting participants' words in the transcripts, and discussing the results with the supervisory team. In addition to the social-ecological model, the researcher used the Braun & Clarke (2006) thematic analysis framework to guide the data analysis to ensure transferability. Dependability was enhanced using Braun & Clarke's 2006 thematic analysis framework. Feedback from the co-supervisor, who was the Principal Investigator on the qualitative component of the HERStory2 study, further enriched the interpretation. Using the social-ecological model enhanced study conformity. The researcher kept reflexive notes containing his introspections to look for pre-suppositions, beliefs, and biases.

Ethical considerations

The HESRStory2 study received ethical approval from the South Africa Medical Research Council (SAMRC) Research Ethics Committee under reference number EC036-9/2020. In addition, the Faculty of Health Sciences Human Research Ethics Committee (HREC), at the University of Cape Town, formally registered the HERStory2 study under HREC REF 302/2023 and accepted the SAMRC HREC approval as the committee of note. The reference number is HREC REF 302/2023. This study was formally approved by the University of Cape Town, Faculty of Health Sciences HREC and the reference number is HREC REF 772/2023. The original research process considered and upheld all the fundamental principles of research ethics. Since the research included minors, both parents and guardians of the minors and the minors who participated in this research provided informed consent during data collection. Other participants, namely community stakeholders and other AGYW who were not minors,

also provided informed consent. Each participant received ZAR 100.00 (US$ 7.00) reimbursement in the form of an electronic cash voucher.

Results

This section, by and large, presents findings relating to the reasons AGYW and other stakeholders believe influence AGYW's engagement in sexual risk behaviour. Thus, the findings reflect both the perspectives of AGYW on their own behaviour and, due to the framing of questions and the nature of the research, their perspectives and perceptions of the motivations for other AGYW. The perspectives about the behaviour of 'others' were dominant in the transcripts and included here, along with the perspectives of community stakeholders. This means that the results reflect the perceptions of others about motivation and decision-making much more than an analysis of AGYW's lived experience. The fact that AGYW spoke more about the behaviour of 'others' rather than their own may be due to greater comfort in speaking about others and blaming them in the process. However, this could still reflect their own experiences. These results are presented under themes organise and in line with the levels of the social-ecological model: individual, interpersonal, community/contextual, and structural.

Individual level

The individual-level factors that respondents believed influence AGYW's engagement in sexual risk behaviour explored here include age, low-risk perception, alcohol consumption and the need for higher grades at school.

a) Age

Age, particularly adolescence, was noted as the reason AGYW may engage in sexual risk behaviour. Observations by older AGYW show that early adolescence is critical since it is a transitional stage of development associated with romantic feelings and that early maturity may cause AGYW to have romantic relationships at a younger age.

> *In my community, we have a situation and cannot act as if it is not there. The situation I am talking about the stage of adolescence, which leads to having boyfriends at a younger age [likely to result in unsafe sex]* (AGYW 20-24 years, Kwazulu-Natal).

b) Low-risk perception

Some AGYW reported that other AGYW had low-risk perceptions regarding HIV and were complacent as far as practising safe sex is concerned.

> *Since it was said that HIV is not a death sentence, people [AGYW] do not care. They get into a romantic relationship and flow with the flow and do nothing [to be safe]. You rarely find that in a particular relationship, girls take HIV seriously* (AGYW 20-24 years, Free State).

They noted that AGYW are less concerned about engaging in sexual risk behaviour specifically because there is treatment for HIV. Therefore, some may AGYW recklessly engage in sexual risk behaviour.

> *HIV is a disease that is no longer feared, and people are no longer scared of it [to practice safe sex] because there's medication wherever you go. Because of this, some adolescent girls change men like they are changing socks [dating men concurrently]. They change them and sleep with them without protection or knowing their statuses* (AGYW 15-19 years, KwaZulu-Natal).

The known availability of HIV treatment, commonly known as antiretroviral treatment (ART), was perceived to influence some AGYW to recklessly engage in sexual risk behaviour because they would get treatment any time, should they need it.

Community stakeholders supported this notion of low-risk perception among AGYW. They blamed AGYW for not taking life seriously nor considering the consequences of their unsafe sexual contact, which may result in adverse SRH outcomes.

> *Our young women have the idea that life is fun and has no consequences. They have this thing in them: life is all about playing [sleeping] around. It [life] is very serious! When you do things, there are always consequences... That nothing can happen to me, I will not get raped, and I will not fall pregnant or sick [with STIs is not correct]* (Intervention Facilitator, North West).

c) Problematic alcohol consumption

AGYW felt that problematic alcohol consumption contributed to unsafe sex. One AGYW noted that other AGYW who engage in sexual activities while drunk may engage in unsafe sex with men and may not remember how it happened due to excessive alcohol intake.

> *Girls from my community are not behaving well. A lot of them are drinking, and they are drunkards and are all over the place. Sometimes, when they get drunk, they end up going with a boy they don't know to his house. The risks are that they will engage in sexual intercourse unexpectedly and most likely without knowing how it happened, resulting in unprotected sex* (AGYW 20-24, Kwazulu-Natal).

One of the community stakeholders, an intervention facilitator, endorsed the connection between alcohol consumption and engaging in sexual risk behaviour. The stakeholder noted that some AGYW may, at times, engage in sex with men who buy them the alcohol in the form of exchange or out of obligation.

> *We hear they sleep with other men because they have given them alcohol, so now they are obliged to sleep with them* (Intervention Facilitator, Kwazulu-Natal).

Drinking alcohol bought by men result in AGYW reciprocating through having sex with men which reduces their agency to negotiate safe sex.

Interpersonal level

The results of this study highlight that AGYW may engage in sexual risk behaviour for various reasons that relate to their interpersonal relationships. These include the impact of social media and peer pressure.

a) Social media and peer pressure

One AGYW strongly felt that social media driven by peer pressure influences whether other AGYW may engage in sexual risk behaviour. She noted that AGYW who are sexually active may influence each other via social media to try out different sex positions they see in pornography.

> *Social media is the most influential thing. The sexually active girls want to try everything they see other people doing on social media and in pornography [without protection]. They [AGYW] want to try different sex styles they see. They say, 'OK, People, Doggy style is good, let's try it; Woman on top is nice, let's try it [disregarding protection]. You know the peer pressure!* (AGYW 20-24 years, Free State).

Thus, the desire to identify with peers on social media results in some AGYW engaging in sexual risk behaviour since they do not use protection as seen in explicit videos.

b) The desire for high grades at school.

One AGYW noted that other AGYW who are attending school might enter into sexual relationships with teachers in exchange for better grades in their subjects.

> *At school, some teachers have just come out of university and are young. Other learners [AGYW] who want high academic marks sleep with them so that they get good grades* (AGYW 15-19, Mpumalanga).

Community-level

Participants, mainly community stakeholders, noted context-specific factors prevalent in specific communities that they felt influenced AGYW to engage in sexual risk behaviour. Some of the factors noted prohibit AGYW from accessing SRH services. Community stakeholders noted a lack of safety due to gang shootings in specific locations of residence. They also noted that some economic activities, such as mining, facilitate AGYW's engagement in sexual risk behaviour. No data was available to represent AGYW's perceptions about community-level factors.

a) Lack of safety

A social worker working in residential areas with gang violence noted that AGYW living in those areas find it challenging to access SRH services from clinics and other centres because of safety concerns.

> *The areas where they [AGYW] live, like Manenberg and Athlone, are very dangerous. It is difficult for them [AGYW] to walk in their areas because there are gang shootings [that always happen]. Because of that, they [AGYW] cannot access SRH services at clinics or our centres* (Social Worker, Western Cape).

As a result of gang shootings in certain areas, AGYW in these areas due to safety concerns do not visit clinics to access SRH services resulting in them engaging in sexual risk behaviour.

b) Mining activities

A social worker working in a mining community revealed that there are high levels of school dropouts among AGYW living in such communities, a factor often associated with sexual risk behaviour. The AGYW, she noted, would also possibly go to the mines to engage in sexual interactions with men who work or visit the mines.

> *My experience working in these communities tells me that mining communities are significantly affected by school dropouts caused by the mines. Most learners who drop out of school go and interact with men working in and visiting the mines, and they sleep with them without protection, hence the high rate of HIV* (Social Worker, Mpumalanga).

Thus, mining communities known for having many school dropouts result in some AGYW who dropped out of school engaging in sexual risk behaviours with men either working in or visiting the mines.

Structural level

AGYW and community stakeholders concur that AGYW may engage in sexual risk behaviour because of poverty, negative attitudes from public healthcare providers at clinics and social and gender norms, which may result in gender inequality and AGYW dropping out of school.

a) Negative attitudes from public healthcare providers at clinics

AGYW confirmed that some AGYW do not want to go to the public health clinic to access SRH services.

> *I have never experienced such issues myself. However, I have heard most friends complaining about it, saying nurses tend to shout at them or talk [to other people] about the problem they are presenting in confidence. They harshly address and judge them, telling them they are too young to pursue boys* (AGYW 15-19 years, KwaZulu Natal).

They reported that the AGYW who avoided going to public health clinics cited several reasons, including ill-treatment, being shouted and laughed at, judgemental attitudes and lack of confidentiality by the nurses.

> *It is common that healthcare workers at clinics laugh at AGYW and gossip about them regarding the services they want* (AGYW 15-19 years, KwaZulu Natal).

b) Poverty

Some AGYW reported that due to poverty, they depend on transactional sex with men who may be older, also known as 'blessers', for them to buy sanitary pads and other necessities or access health care. According to one AGYW, this primarily stems from the inability of anyone in the family to afford meeting their needs.

> *We depend on a person (men) to give us R100 so that we can buy sanitary pads because, at home, they cannot afford to support us. We are poor. Where can we get that money? We cannot sleep on an empty stomach. So, the only way to survive is to have blessers, and I will not lie to you, I date blessers to make a living because there is no other better way to make a living, you see (*AGYW 20-24 years, KwaZulu Natal).

Most community stakeholders perceived that poverty is a significant reason AGYW engage in transactional sex. They reported that AGYW do so out of desperation to get necessities to survive.

> *They end up getting blessers not because they want to do that or enjoy it, but because there is nothing at home. They cannot live like other kids, so they must hustle. They then see having a blesser as a way out because they will have clothing or whatever they*

need. They do that even though they don't like doing it. Some don't like it but feel that is the only way (Social Worker, Cape Town).

Besides engaging in transactional sexual relationships to survive, AGYW and community stakeholders alike perceive that some AGYW from poor backgrounds may engage in such relationships to lead the lifestyles they aspire to.

Let's say your friend has a Samsung J7. You want to be like your friend, and then you say let me date that older man. Because I can see that he has money and has a good job, I saw it happening, mostly at school, you will find that your friend always has money to buy such things as phones. Then, you can see that you are suffering. So, you realise that let me date older men, so that I can buy for myself (AGYW 20-24 years, KwaZulu Natal).

The desire to fit in with friends influences some AGYW to engage in transactional sexual relationships with older men.

Some AGYW explained the dynamics of transactional sex, which may result in unsafe sex. They noted that transactional sexual relationships between AGYW and blessers are associated with non-consensual sex because the former are not able to negotiate safe sex.

He expects something in return when he [blesser] gives you money. When you don't give him what he wants, he will forcefully demand it so you can do what he wants. Let's say he gives you money every month end. You will repay it by sleeping with him even if you do not want to because you only date him for the money. He will force himself onto you (AGYW 20-24 years, Mpumalanga).

Based on first-hand and second-hand information, AGYW stated that men who give AGYW money demand payment in kind through sex. Furthermore, AGYW suggested that blessers do not entertain AGYW objecting to sex.

c) Social and gender norms

AGYW noted that social and gender norms may influence sexual risk behaviour in their romantic relationships with their boyfriends. Asked about who makes decisions about having sex and engaging in safe sex in romantic sexual relationships with boyfriends of their age, AGYW noted that due to social norms, men always make such decisions.

From our shared experience as girls, I can say men always lead because, typically, as women, we are shy when it comes to making decisions regarding sex. Regarding

condom use, they will say, 'No, this thing hurts me and all the stuff.' They will manipulate you, and you will agree (AGYW 20-24 years, Free State).

As a result, when in romantic relationships, they may find it difficult to deny them sex, including unsafe sex. They also perceived that men use that position to manipulate them into having unsafe sex.

Boys usually make decisions in a relationship, and you do not have a say as a girl. Everything they say, we are not supposed to oppose it; we must listen to them and listen to what they say [including having unsafe sex (AGYW 15-19 years, North West).

Since men are given the power to make sexual decisions in some societies due to social norms, some of them choose not to engage in safe sex knowing that AGYW would not question them. As a result, AGYW in such relationships engage in sexual risk behaviour.

One AGYW who fell pregnant at the age of 15 while living with her grandmother reported that her grandmother could not share SRH information, including safe sex, with her due to social norms. She noted that her grandmother avoided talking about SRH because she thought it was inappropriate at such a young age.

[My grandmother] As a parent, she never talked to me about sex issues…She was just ashamed to say anything about sex talk with me since I was that young. She thought its inappropriate (AGYW 20-24 years, Free State).

Some elderly people avoid discussing sexual issues with AGYW because they feel it is not appropriate due to their young age.

The results are visually summarized diagrammatically, demonstrating how factors at various levels of the social-ecological model intersect and interact to shape engagement in sexual risk behavior among AGYW. Individual-level factors, including age, perceptions of risk, alcohol consumption, and academic motivations, interact with interpersonal dynamics, community contexts, and broader structural forces to influence sexual risk behavior among AGYW.

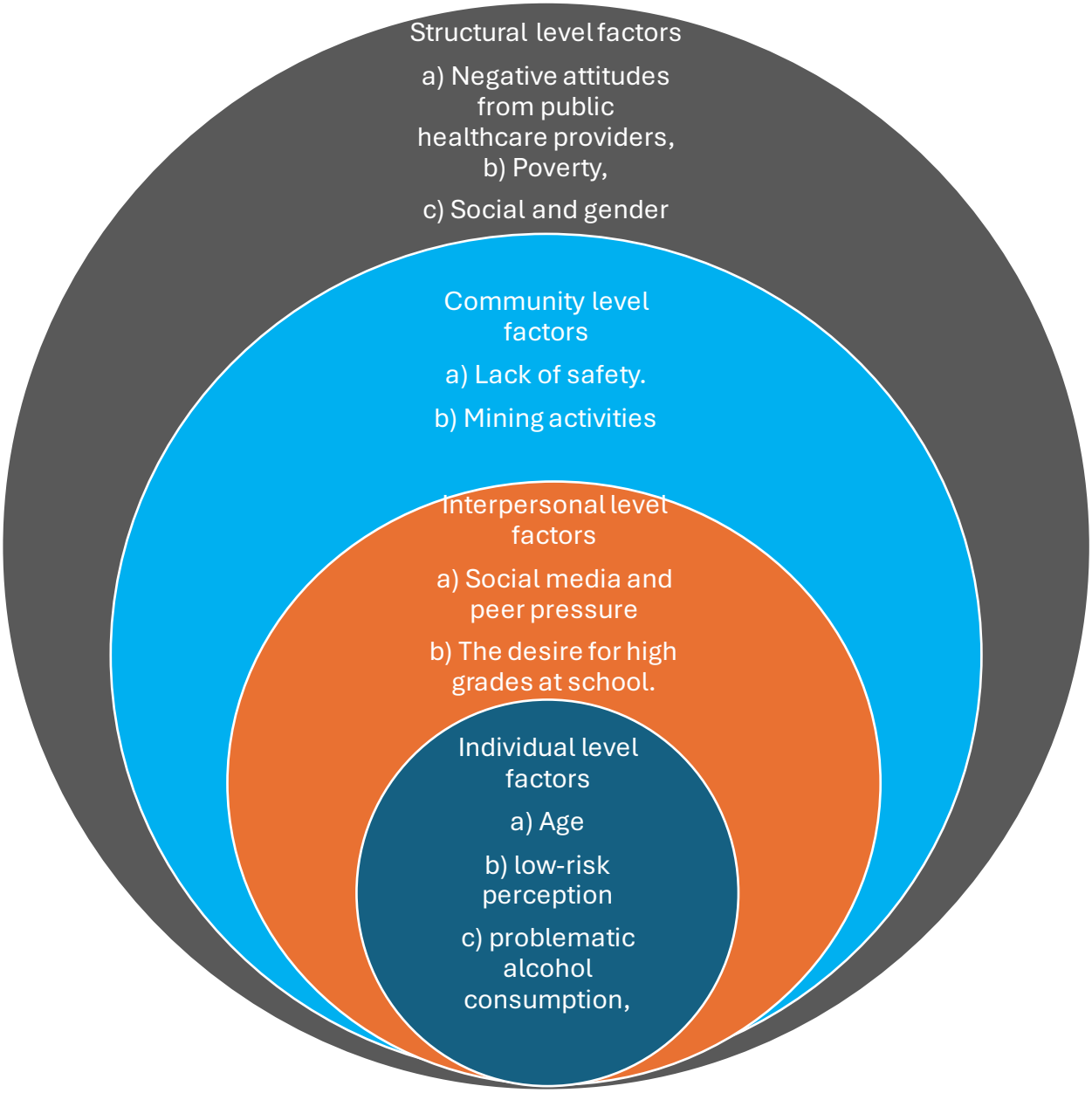

Fig 1: Social-ecological model diagram

Discussion

This study explored the perspectives of South African adolescent girls and young women (AGYW) and community stakeholders on why AGYW engage in sexual risk behavior. The results are dominated by AGYW's views on why their peers, rather than themselves, engage in these behaviours. Using the social-ecological model, the analysis reveals key themes across four levels: individual, interpersonal, community, and structural. Individual factors include adolescence, low-risk perception of HIV, and problematic alcohol consumption. Interpersonal influences involve social media and peer pressure and the desire for high grades. Community-level factors highlight safety concerns and the impact of mining activities. Structural factors encompass negative attitudes from healthcare providers, poverty, and restrictive social and gender norms. This paper addresses a gap in understanding the multifaceted reasons for AGYW's sexual risk behaviours, providing a comprehensive framework for developing targeted interventions.

Age, low-risk perception and problematic alcohol consumption were noted as reasons for AGYW's engagement in sexual risk behaviour at the individual level. Perceptions of older AGYW showed that age, especially the early adolescent stage of development, drives younger AGYW to engage in sexual risk behaviour. This aligns with previous research indicating that adolescence is a pivotal developmental stage characterised by the emergence of romantic feelings, potentially leading AGYW to pursue romantic relationships that can result in unsafe sexual practices [7,31,32].

AGYW and community stakeholders alike reported that some AGYW engage in sexual risk behaviour due to low-risk perception emanating from knowing that there is treatment for HIV. Participants concurred that AGYW exhibited complacency regarding enhancing safe sex since there is HIV treatment. As a result, some AGYW participate in sexual risk behaviour that leads to adverse SRH outcomes.

Another individual-level reason noted by participants influencing AGYW to engage in sexual risk behaviour is problematic alcohol consumption. In addition to reducing inhibitions and increasing sexual risk behaviour, excessive alcohol consumption may cause AGYW to lose agency, resulting in them being taken advantage of by men as they participate in non-consensual sex [33–35].

At the interpersonal level, AGYW suggested that other AGYW may engage in sexual risk behaviour because of the influence of social media-induced peer pressure. In light of social media, AGYW noted that other AGYW share explicit content with their peers and encourage each other to try out different sex positions they see in pornography. International studies have shown that although social media is essential in promoting safe sex, if not monitored, AGYW can use it on the contrary [36,37].

Community stakeholders noted context-specific or community-level factors common in specific communities as facilitators of sexual risk behaviour among AGYW. They concurred that AGYW who live in unsafe communities with gang violence, including shootings, find it challenging to access SRH services requisite in enhancing safe sex as they are afraid to be caught in the crossfire during gang fights. As a result, they end up engaging in sexual risk behaviour. Other South African studies support that gang violence prohibits AGYW from accessing SRH services due to safety concerns [38].

Mining, due to its negative externalities to surrounding communities, was cited by community stakeholders as a context-specific factor enhancing sexual risk behaviour among AGYW. Other studies also show that mining activities provide a conducive environment for AGYW to engage in unsafe sex [39,40].

This study established three structural reasons for AGYW to engage in sexual risk behaviour viz poverty, negative attitudes of healthcare providers in public health clinics and social and gender norms. Like in other studies, poverty was highlighted by both AGYW and community stakeholders to increase the vulnerability of AGYW from poor backgrounds, driving them to engage in transactional sex with older men for AGYW to survive [41–44]. They noted that AGYW engage in such relations to buy essential goods and services. These findings align with other studies [36,45–47].

This study established the dynamics found particularly in age-disparate and transactional sexual relationships between AGYW and older men, which puts AGYW at risk. Based on personal experiences and the experiences of others, AGYW who engage in these relationships reported that they were coerced into sex with older men [38,42,44]. The economic and material imbalance that exists between AGYW and older men increases AGYW's vulnerability as it may stifle AGYW's ability to negotiate for safe sex [48]. Many studies show that older men

threaten to withdraw the monetary or material 'favours' if AGYW insist on safe sex or report sexual abuse stifling their agency [62,64].

AGYW cited negative attitudes by healthcare providers in public health clinics as a reason preventing them from accessing SRH services essential to enhancing safe sex. The negative attitudes, scare away AGYW from the clinics. If AGYW avoid going to clinics they are less likely to receive SRH information, condoms, PrEP and contraceptives increasing their chances of engaging in sexual risk behaviour. These findings resonate with the findings of other studies, which noted negative attitudes from healthcare providers, specifically for SRH for AGYW in public healthcare clinics. Due to the negative attitudes, AGYW avoiding public healthcare clinics resulting in them engaging in unsafe sex [53–55].

It emerged from the narratives of AGYW that gender and social norms may influence other AGYW to engage in sexual risk behaviour. According to AGYW, these give more power to men, evidenced by men making decisions in romantic sexual relationships, including safe sex. Other studies in South Africa and beyond established similar findings in which men, due to social and gender norms, make sexual decisions [56–59].

AGYW who fell pregnant cited social norms as a key deterrent to open discussions regarding sex between parents and AGYW, which contributes to AGYW engaging in unsafe sex due to ill-informed decisions. In most African countries and other conservative cultures, open discussions about sex with AGYW are taboo [60–62]. Also, older people avoid talking about sex with AGYW of school-going age because they believe that it is not necessary since they do not engage in sex; older people also fear encouraging AGYW to be sexually active at an early age [63–66].

Study limitations

The study findings should be interpreted while considering its limitations. First, it is essential to note that although data on sexual risk behaviour was collected, it was not the primary purpose of the evaluation study and not many questions were directly asked about why AGYW themselves may engage in sexual risk behaviour. Second, since sexual behaviour discussions are sensitive, some AGYW may have said that they were speaking about 'other AGYW' rather than disclosing their behaviour, mainly when talking about sexual risk behaviour due to social desirability bias. However, it is assumed that some participants who were sexually active were

reflecting on their own behaviour despite not explicitly stating so. Third, failure to ask direct questions on sexual behaviour limited in-depth probing, which restricted the exploration of the concept of sexual risk behaviour, resulting in less detailed information on why AGYW engage in sexual risk behaviour. Fourth, the study's reliance on a small sub-group of AGYW who were not sampled based on their sexual behaviour including risk may limit the generalisability of findings to broader populations or different regions.

Recommendations for interventions

Based on the research findings, several recommendations are proposed to reduce AGYW engagement in sexual risk behaviour. Firstly, it is crucial to develop and implement comprehensive sexual education programs tailored to the developmental stages of AGYW. These programs should cover safe sex practices, the importance of HIV and STI prevention, and the risks associated with sexual risk behaviour. A well-rounded education will equip AGYW with the knowledge they need to make informed decisions about their sexual health.

Secondly, initiatives aimed at reducing problematic alcohol consumption among AGYW should be established, as alcohol use encourages sexual risk behaviour. This could include educational campaigns, support groups, and partnerships with local communities to provide alternatives to alcohol consumption. By addressing alcohol use, we can mitigate one of the factors contributing to risky sexual behaviour.

Additionally, it is essential to create programmes that educate AGYW on the responsible use of social media. These programmes should highlight the risks of sharing explicit content and the influence of peer pressure, promoting positive online behaviour to reduce engagement in sexual risk behaviour. Educating AGYW on navigating social media safely can help prevent them from being influenced by harmful online content.

Economic support programs for AGYW from poor backgrounds should also be implemented to reduce the necessity for transactional sex. These programs could include scholarships, vocational training, and financial literacy programs. Providing economic opportunities can help AGYW avoid situations where they might feel compelled to engage in sexual risk behaviours for financial reasons.

Another key recommendation is to train healthcare providers to foster positive attitudes and supportive environments in public health clinics. Ensuring that AGYW feel welcome and safe when accessing sexual and reproductive health (SRH) services will encourage them to seek the care they need. Healthcare providers should be trained to provide nonjudgmental, compassionate care that meets the unique needs of AGYW.

Finally, it is important to encourage open communication between parents and AGYW about sexual health. Providing resources and workshops to help parents engage in these discussions comfortably and informatively can lead to better-informed AGYWs who feel supported in their sexual health decisions. Open dialogue between parents and AGYW can play a significant role in reducing sexual risk behaviours by creating an environment of trust and understanding.

Recommendations for future research

With most participants in this study sharing their perspectives on why other AGYW engage in sexual risk behaviour, rather than discussing their own behaviours, it is recommended to conduct qualitative research that explicitly asks AGYW about their own sexual risk behaviour. This approach will help explore the nuanced reasons behind AGYW's sexual risk behaviour and provide a deeper understanding of their experiences and motivations. Additionally, it is crucial to investigate the perspectives of male partners to understand their influence on AGYW's sexual risk behaviour and identify potential points of intervention. Furthermore, studying the impact of technology and digital media on AGYW's sexual behaviour and exploring how positive digital interventions can be leveraged is essential.

Conclusion

This study offers insights regarding the perceptions of AGYW on the factors influencing AGYW like themselves to engage in sexual risk behaviour. The perceptions of AGYW were triangulated with those of key stakeholders. Using the social-ecological model, the research identifies multifaceted influences at individual, interpersonal, community, and structural levels. According to respondents, AGYW engage in sexual risk behaviour due to reasons such as low-risk perception, young age, problematic alcohol consumption, and academic aspirations. Social media, peer pressure, lack of safety, negative healthcare provider attitudes, poverty, and social and gender norms contribute to these behaviours at different levels.

Given the concern over adverse SRH outcomes, comprehensive interventions are proposed. At the individual level, these involve sexual education, awareness, and skill-building programmes covering contraception, condom and PrEP use, and consequences of engaging in sexual risk behaviour including HIV and other STIs. Interpersonal level interventions include peer support, while community-level strategies encompass sexual education campaigns and collaboration with local organizations. Policy advocacy for comprehensive SRH education in schools is recommended at the structural level, along with healthcare provider training and economic empowerment initiatives for AGYW, for example, vocational training, skills development, entrepreneurship programmes, and offering education and employment opportunities. The study emphasizes the importance of understanding and addressing the diverse factors influencing AGYW's sexual risk behaviour for effective intervention planning.

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Declaration of competing interests

The author declares no competing interests.

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APPENDICES

Appendix 1: Letter of Approval – SAMRC HREC: HERStory2 Study

HUMAN RESEARCH ETHICS COMMITTEE

16 January 2024

Human Research Ethics Committee
University of Cape Town

Dear HREC of UCT

Protocol ID:	EC036-9/2020
Protocol title:	HERStory 2 Study: Process evaluation of the combination HIV prevention intervention for adolescent girls and young women (AGYW), Global Fund grant period 2019 to 2022

Kindly note that the above-mentioned study (with Prof Cathy Mathews as PI) was approved by the SAMRC HREC in October 2020, and the study was completed and closed in September 2021. For the duration of the study, the SAMRC HREC served as the HREC of note.

Yours sincerely

Prof Danie du Toit
Chairperson: SAMRC Human Research Ethics Committee

THE SOUTH AFRICAN MEDICAL RESEARCH COUNCIL
Francie Van Zijl Drive, Parowvallei, 7505, Cape Town | Po Box 19070, Tygerberg, 7505, South Africa Tel: +27 (0)21 938 0687 | Fax: +27 (0)86 685 4023 | Email: adri.labuschagne@mrc.ac.za | Web: www.samrc.ac.za/ethics/ethics.htm

Appendix 2: HERStory 2 Letter of registration with UCT HREC

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee
Room 45 E-52-E-Floor- Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6492
Email: hrec-submjssions@uct.ac.za
Website: www.health.uct.ac.za/home/human-research-ethics

13 June 2023

HREC REF: 302/2023

Dr C Mathews
Public Health
Email: Catherine.mathews@mrc.ac.za

Dear Dr Mathews
PROJECT TITLE: HERSTORY 2 STUDY: PROCESS EVALUATION OF THE COMBINATION HIV PREVENTION INTERVENTION FOR ADOLESCENT GIRLS AND YOUNG WOMEN (AGYW), GLOBAL FUND GRANT PERIOD 2019 TO 2022-SUB-STUDY LINKED TO 709/2022 SAMRC HREC EC0369/2020

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee (HREC).

The HREC formally registers the above-mentioned parent study. We are accepting the MRC HREC approval and giving this parent study a reference number.

Please be reminded to send all future approvals from the MRC HREC to us.

You are required to send in a progress report for this parent study at the end of June 2024 for our records.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote HREC REF 302/2023 in all your correspondence.

Yours sincerely

PROFESSOR M LOCKMAN
CHAIRPERSON, FACULTY OF HEALTH SCIENCES HUMAN RESEARCH ETHICS COMMITTEE

HREC/ref 302/2023

Appendix 3: Letter of Approval for this study – UCT HREC

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee
Room 45, E-52 Old Main Building
Groote Schuur Hospital
Observatory 7925
Tel:0214066492
Email: hrec-submissions@uct.ac.za
Website: www.health.uct.ac.za/home/human-research-ethics

29 January 2024

HREC REF: 772/2023

Prof L Knight
School of Public Health & Family Medicine
Email: lucia.knight@uct.ac.za
Student: chmpai002@myuct.ac.za

Dear Prof Knight

PROJECT TITLE: AN EXPLORATION OF THE DETERMINANTS OF SEXUAL RISK BEHAVIOUR AMONG ADOLESCENT GIRLS AND YOUNG WOMEN AGED 15-24 YEARS IN SOUTH AFRICA: A SUB-STUDY OF THE 2019-2022 HERSTORY2 STUDY LINKED 302/2023 (MASTERS' CANDIDATE -MR PAIDASHE CHAMUKA)

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee (HREC) for review.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study,

Approval is granted for one year until the 30 January 2025.

Please submit a progress form, using the standardised Annual Report Form (FHS016) or FHS017 if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

(Forms can be found on our website: www.health.uct.ac.za/fsh/research/humanethics/forms)

The HREC acknowledges that the Master of Public Health candidate Mr. Paidashe Chamuka will also be involved in this study.

Please note that for all studies approved by the HREC, the principal investigator must obtain appropriate institutional approval, where necessary, before the research may occur.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote HREC REF 772/2023 in all your correspondence.

Yours sincerely

PROFESSOR M LOCKMAN
CHAIRPERSON, FACULTY OF HEALTH SCIENCES HUMAN RESEARCH ETHICS COMMITTEE
Federal Wide Assurance Number: FWA00001637. Institutional Review Board (IRB) number: IRB00001938
NHREC-registration number: REC-210208-007

This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use: Good Clinical Practice (ICH GCP), South African Good Clinical Practice Guidelines (DOH 2020), based on the Association of the British Pharmaceutical Industry Guidelines (ABPI), and Declaration of Helsinki (2013) guidelines. The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

Appendix 4: Confidentiality agreement

Confidentiality Agreement

Title of Research Project: HERStory 2 Process Evaluation

Overall HERStory 2 Principal Investigator: Catherine Mathews HERStory 2 Qualitative Study Component Principal Investigator: Zoe Duby

I understand that I may obtain confidential information about the study, organisations involved, procedures, findings and study instruments. By signing this statement, I am indicating my understanding of my responsibilities to maintain confidentiality and agree to the following:

- I understand that names and any other identifying information about study sites and study procedures are completely confidential.
- I agree not to divulge, publish, or otherwise make known to unauthorized persons or to the public any information obtained in the course of this research study (forms, findings, procedures etc.) that could identify the persons who participated in the study.
- I understand that all information about study sites, procedures, type of participants enrolled is confidential. I agree not to divulge or otherwise make known to unauthorized persons any of this information.
- I understand that I am not to read information about study sites or participants, or any other confidential documents, nor ask questions of study participants for my own personal information but only to the extent and for the purpose of performing my assigned duties.
- I agree to notify the study coordinator or principal investigator immediately should I become aware of an actual breach of confidentiality or a situation, which could result in a breach, whether this be on my part or on the part of another person.
- I agree to respect all members on the study team and will not divulge any information they share during meetings to any unauthorized persons (public, family, friends)

Paidashe Chamuka 28/03/2022
Name and surname of student **Date (dd/mm/yyyy)**

Signature

Zoe Duby 28/03/2022
Name and surname of
Qualitative Study Component Principal Investigator **Date (dd/mm/yyyy)**

Signature

Appendix 5: Sexual and Reproductive Healthcare Journal – Instructions for authors

https://www.sciencedirect.com/journal/sexual-and-reproductive-healthcare/publish/guide-for-authors

Introduction

Aim

Sexual and Reproductive Healthcare is a peer-reviewed, quarterly, multidisciplinary journal of the Swedish Association of Midwives. It is a global forum for health research and policy topics. It publishes original research, scientifically based review articles, study protocols and invited editorials and commentaries related to sexual and reproductive health care. Studies with various methodologies are welcome.

The journal welcomes original papers in all aspects of sexual and reproductive health including family planning and counseling, management of pregnancy, labour and birth, breastfeeding, postnatal care, parenthood, abortion, infertility and IVF, sexually transmitted diseases and HIV prevention, and issues related to the menopausal and post-menopausal years. Also welcome would-be topics such as cultural, educational, historical and professional aspects of reproductive and sexual health.

The journal audience would include researchers, social scientists, health care providers as well as policy and decision makers in sexual and reproductive health.

Types of Papers

Abstracts: A structured abstract is required for all original research articles. The structured abstract, limited to 250 words, should contain all and only the following major headings: **Objective**; **Methods**; **Results** and **Conclusion**.

Original articles: a full-length report of original basic or clinical investigation (3000-5000 words including tables, up to 30 references). A structured abstract of no more than 250 words with the following sections (objective, methods, results, conclusions) is required. The rest of the paper should be structured as follows: Introduction, Methods, Results, Discussion, References.

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

• E-mail address

• Full postal address

All necessary files have been uploaded:

Manuscript:

• Include keywords

• All figures (include relevant captions)

• All tables (including titles, description, footnotes)

• Ensure all figure and table citations in the text match the files provided

• Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)

Supplemental files (where applicable)

Further considerations

• Manuscript has been 'spell checked' and 'grammar checked'

• All references mentioned in the Reference List are cited in the text, and vice versa

• Permission has been obtained for use of copyrighted material from other sources (including the Internet)

• A competing interests statement is provided, even if the authors have no competing interests to declare

• Journal policies detailed in this guide have been reviewed

• Referee suggestions and contact details provided, based on journal requirements

Before you begin

Manuscripts must adhere to recognised reporting guidelines relevant to the research design. Please upload the appropriate and completed Reporting Guideline Checklist during your manuscript submission process.

Qualitative researchers are encouraged to consult the guideline listed below:

Qualitative research - SRQR - Standards for Reporting Qualitative Research: A Synthesis of Recommendations SRQR Checklist

Ethics in publishing

Please see our information on Ethics in publishing.

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All manuscripts reporting data from studies involving human participants should include a statement that the research protocol was approved by the relevant institutional review board or ethics committees. Please state in the Method section the manner in which informed consent was obtained from the participants. The work described in your article must have been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans http://www.wma.net/e/policy/b3.htm

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information in study design, data analysis, outcome reporting and research interpretation - however, please note there is no single, universally agreed-upon set of guidelines for defining sex and gender.

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Sex generally refers to a set of biological attributes that are associated with physical and physiological features (e.g., chromosomal genotype, hormonal levels, internal and external anatomy). A binary sex categorization (male/female) is usually designated at birth (""sex assigned at birth""), most often based solely on the visible external anatomy of a newborn. Gender generally refers to socially constructed roles, behaviours, and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view themselves and each other, how they behave and interact and how power is distributed in society. Sex and gender are often incorrectly portrayed as binary (female/male or woman/man) and unchanging whereas these constructs actually exist along a spectrum and include additional sex categorizations and gender identities such as people who are intersex/have differences of sex development (DSD) or identify as non-binary. Moreover, the terms ""sex"" and ""gender"" can be ambiguous—thus it is important for authors to define the manner in which they are used. In addition to this definition guidance and the SAGER guidelines, the resources on this page offer further insight around sex and gender in research studies.

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