

**FACTORS CONTRIBUTING TO THE VULNERABILITY OF YOUNG WOMEN
AGED 15-24 YEARS TO HIV IN ZIMBABWE**

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Factors contributing to the vulnerability of young women aged 15-24 years to HIV in Zimbabwe

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Science in International Health

By

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ABSTRACT

Background: HIV remains a significant public health issue in Zimbabwe, particularly among young women aged between 15-24 years who are 4 times more likely to contract HIV than males due to intersecting risks and vulnerabilities. Preventing HIV infection among young women is key to ending AIDS by 2030 and attaining epidemic control.

Objectives: To analyse factors contributing to HIV vulnerability among young women aged between 15-24 years in Zimbabwe and inform policies, guidelines and programmes aimed at mitigating this vulnerability.

Methodology: The study utilised a literature review and in-depth interviews with key informants. Analysis was conducted using the health behaviour change model for HIV prevention and treatment by Kaufmann et al. (1).

Findings: HIV vulnerability among young women is influenced by individual, interpersonal, community, institutional and structural factors. Key factors include lack of comprehensive HIV knowledge, low and inconsistent condom use, early sexual debut, intergenerational and age disparate relationships, intimate and gender-based violence, gender and sexual norms, marriage practices, barriers within the health system, poor socio-economic conditions, laws and policies and education.

Discussion: Individual factors directly increase vulnerability, while interpersonal and community factors shape behaviour and relationships within social networks. Health system barriers hinder access to HIV preventative services and information. Structural factors create conditions that heighten HIV risk. Vulnerability among young women results from the interplay of individual, interpersonal, community, institutional and structural factors. A holistic approach addressing these underlying drivers is essential to reduce HIV vulnerability among young women in Zimbabwe.

Key Words: HIV, Vulnerabilities, Young Women, Zimbabwe

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Abbreviations

| | |
|----------------|---|
| AIDS | Acquired Immune Deficiency Syndrome |
| ART | Antiretroviral Therapy |
| HIV | Human Immune Virus |
| PREP | Pre-Exposure Prophylaxis |
| PEPFAR | President's Plan for AIDS Relief |
| SSA | Sub Saharan Africa |
| SRHR | Sexual Reproductive Health Rights |
| STIs | Sexually Transmitted Infections |
| UNICEF | United Nations Children Emergency Fund |
| UNDP | United Nations Development Programme |
| UNAIDS | Joint United Nations Programme on HIV/AIDS |
| WHO | World Health Organisation |
| YW | Young Women |
| ZIMPHIA | Zimbabwe Population -based HIV Impact Assessment |
| ZDHS | Zimbabwe Demographic Health Survey |

Operational Definitions

Comprehensive HIV knowledge: Knowing that the consistent use of condoms and having a faithful and reliable partner can reduce the risk of contracting HIV, knowing a healthy person can be HIV positive and rejecting two of the most common misconceptions about the transmission and prevention of HIV .

HIV Incidence: This is the number of new infections occurring per year in a population divided by the number of people living with HIV in the same population (UNAIDS 2016).

HIV prevalence: The proportion of persons in a population who are living with HIV at a specific point in time. (2)

Pre-exposure Prophylaxis (PrEP): PrEP is the use of ARVs by people at risk for HIV to prevent HIV acquisition (2).

Stigma: Stigma is a social process that is rooted in power that includes labelling ,attributing negative stereotypes to people or groups who have been labelled which culminates in discrimination (3).

Young Women: Females who fall within the ages of 15-24 years. All of the data and discussion in this study on young women is presented in terms of this age stratification (4, 5).

HIV Risk: The probability or likelihood that a person may become infected with HIV. Certain behaviours create, increase, and perpetuate risk. Examples include unprotected sex with a partner whose HIV status is unknown, multiple sexual partnerships involving unprotected sex, and injecting drug use with contaminated needles and syringes (6).

Vulnerability: The degree to which an individual is likely to experience risk due to exposure to individual, household, community and structural characteristics (7) . In the context of HIV, it refers to an increased exposure to HIV risk. This vulnerability results from a range of factors outside the individual's control which reduce the ability of individuals to avoid HIV risk. Vulnerability to HIV risk results from a combination of factors which exacerbate risk (6).

Transactional sex: Sexual intercourse within the confines of a relationship between men and women, where exchange of money or materials goods takes place.

Intergenerational relationships: The sexual relationship between with the age difference of more than 10 years or more age gap between the sexual partners is called as intergenerational sex.

Age-disparate relationships: Relationships where the age gap between sexual partners in a relationship is 5 years.

Safer sex: The term 'safer sex' refers to adopting a sexual behavioural that will reduce or minimise the risk of HIV transmission. For example, postponing sexual debut, non-penetrative sex, correct and consistent use of male or female condoms, and reducing the number of sexual partners.

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Introduction

Globally, HIV incidence has fallen dramatically due to intensive public health prevention efforts (8). However, young women remain disproportionately affected accounting for 45% of the global infections (9, 10). Despite constituting about 11% of the global population, in 2015 they accounted for 20% of the global new infections (11) and 49% in the year 2021 (12). Reports indicate that three in every five new infections globally are among young women (13). The 2022 World Aids Day report indicated that a young woman acquired HIV every two minutes, with the proportion of new infections rising from 45% in 2016 to 49% in the year 2021 (12).

Significant regional variations exist, with the highest burden in Sub Saharan Africa (SSA) , where young women drive the epidemics (14). This contrasts with Eastern Europe and Central Asia, where key populations and their partners are most affected. These variances indicate the homogenous nature of HIV and cements the needs for targeted interventions and research.

Over half of all HIV infections among young women occur in 10 high HIV burden countries in Eastern and Southern Africa including Zimbabwe, Mozambique, South Africa, and Zambia and are sexually transmitted (10, 14). Women in SSA account for 60% of all HIV infections, half of which are among young women (15). According to the United Nations in 2015, young women accounted for 56% of all the new infections among adults in Southern Africa (11). All the countries in SSA countries display a clear disparity between in age and sex acquisition of HIV with young women acquiring HIV and seroconverting 5-7 years earlier than their male counterparts (5, 16). Additionally, the new infections among young women declined by 42% while among males of the same age group , the decline in new infections was 56% (12).

Zimbabwe has one of the highest burdens of HIV with adult prevalence estimated to be 13.4% overall, 11.3% in males and 15.4% in females (17). Unprotected heterosexual sex is the main transmission mode, and despite a decline in prevalence attributed to behaviour change and ART coverage, young women still face higher rates of infection than men (16, 18, 19). Young women remain disproportionately affected by the epidemic, with a prevalence rate higher (14.7%) than men (8.7%) (20). Among individuals aged between 15-19, incidence rate among women is six times higher than that of men in the same age bracket. (20, 21). This underscores the need to identify the factors making this demographic vulnerable to HIV in order to come up with interventions.

A similar trend is also visible in the countries that share borders with Zimbabwe. In Mozambique, young women are three times more likely to contract HIV than men (22). In Zambia, 13% of the young women live with HIV compared to 7% of men (23). A systematic review and meta-analysis reported that in South Africa, HIV incidence among young women exceeds their male peers in all settings (24, 25). This trend is highly alarming, considering the long-term implications on public health and the social wellbeing of communities.

The heightened vulnerability of young women to HIV in Zimbabwe and neighbouring countries can be attributed to a combination of factors. Qualitative studies conducted in Mozambique emphasize the impact of gender and power differentials as well as economic dependency on young women's vulnerability to HIV (26). Similarly, research in Zambia highlights the influence of gender inequalities as the primary driver of vulnerability among young women in Zambia (27). Gender inequalities put the young women at risk due to sexual coercion and intimate partner violence. Other studies attributed the heightened vulnerability among young women to physical and sexual intimate partner violence (28). This violence undermines women's power within relationships and increases their susceptibility to HIV infection. Other studies have identified structural factors including environmental, social and economic barriers as contributing to the burden of HIV among young women (20). These barriers deprive women of the ability to make decisions about their sexual health making them vulnerable to contracting HIV, reduce the ability to access preventative and treatment services and hamper their ability to mitigate against the impact of HIV/AIDS (12).

Addressing the high rates of HIV transmission among young women is crucial for progress towards ending HIV/AIDS. AIDS related causes are the third leading cause of death among women globally and among the young women aged between 15-24 in Africa, it is the second leading cause of death after maternal mortality (12). UNAIDS reported that between 2005-2015, the number of HIV related deaths among the young population increased by 45% (11). The global funds reports that one person dies from AIDS every minute (29). It is therefore imperative for countries to come up with strategies specific to age groups, populations, and geographic locations to end AIDS by 2030.

This study intends to analyse these factors and their interactions in heightening the vulnerability of young women to HIV to inform interventions aimed at mitigating the risk of young women to HIV in Zimbabwe.

Chapter 1: Background

This chapter presents the geography, demography, socio-economic, socio-cultural and health systems overview of Zimbabwe relevant to HIV/AIDS.

1.1 Geography

Zimbabwe is a landlocked country located in the Southern African Region. The country shares borders with Zambia, Mozambique, South Africa, and Botswana to the northwest, northeast, south, and southwest respectively. For administrative purposes, the country is divided into 10 provinces and 63 districts. The map of Zimbabwe is shown in Figure 1 below.

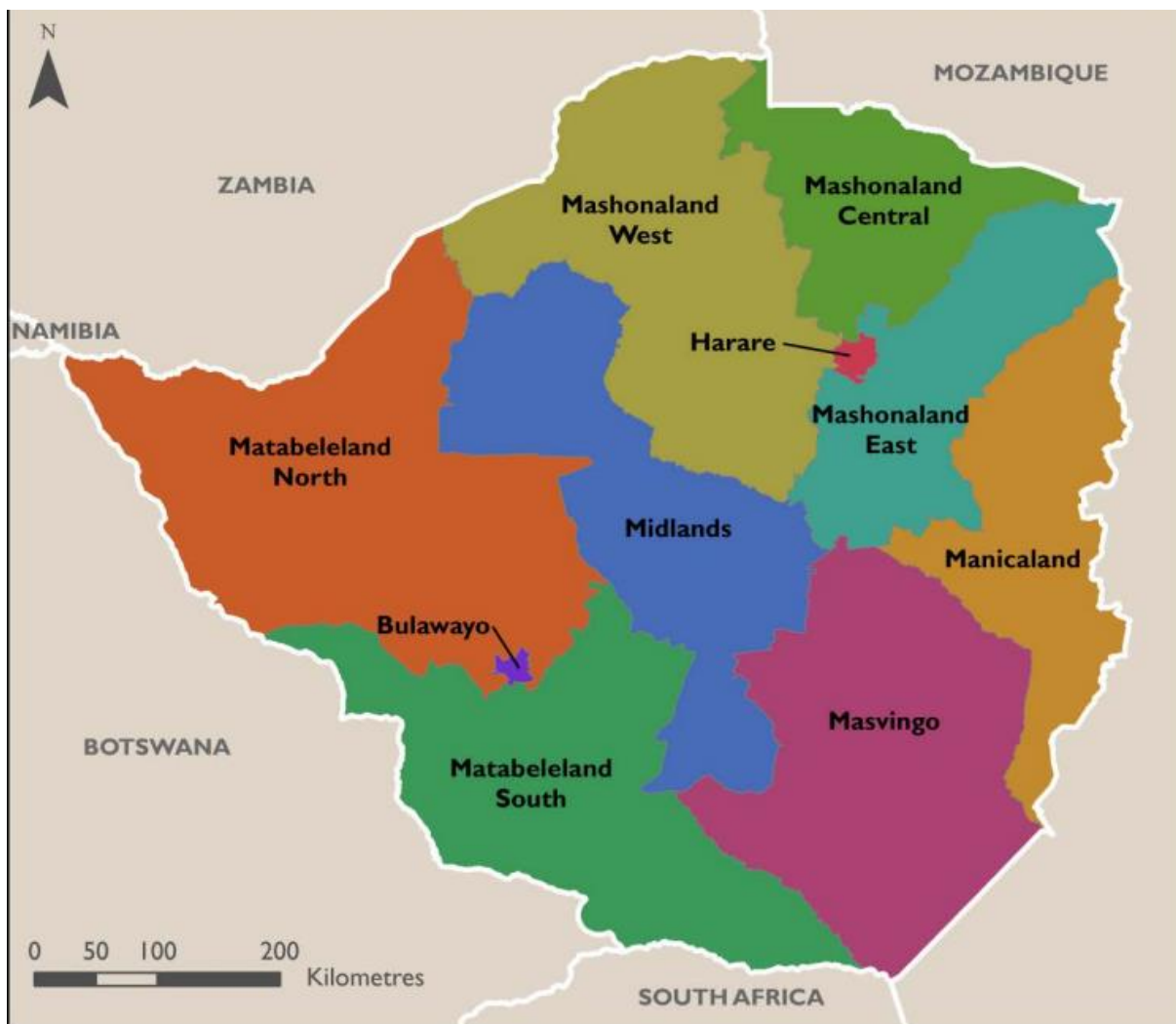


Figure 1: Map of Zimbabwe

Source: Zimbabwe Demographic Health Survey (2015) Final Report (30)

1.2 Demographic Profile

The 2019 census reported that Zimbabwe has a population of 15.02 million people with women constituting 52% of the total population (18). The population of the country is young with 52% between the ages of 15-64. Median age of first marriages is 19.7 for women and 24.8 for men. HIV prevalence among adults between the ages of 15-49 years is estimated to be at 13.7% and prevalence is higher among women (18%) than men (12%) (31). More than 70% of the population lives in the rural areas (31). Data has shown that the prevalence rate for women is higher than men in both rural and urban areas and among married women (32). Harare province has the highest proportion of the population (16%) while Matabeleland South and Bulawayo constitute (5%). Population distribution influences investments in HIV/AIDS Prevention and Control (18).

1.3 Socio-economic situation

The Zimbabwean economy has deteriorated and is amongst the worst economies in Southern Africa (31). A majority of women engage in cross-border trading with neighboring countries where they are vulnerable to sexual and other forms of abuse thereby increasing exposure to HIV (31). The deterioration of the economy has impacted the remuneration of Zimbabwean workers leading to a massive brain drain of the experienced professionals in the health sector, negatively impacting the quality and coverage of HIV/AIDS services (31).

1.4 Socio-cultural and Religious Environment

Zimbabwe is a deeply religious country, with 84% of the population above the age of 15 identifying as Christians (33). The largest proportions of these Christians belong to apostolic sects, which are known for practices such as polygamy, child marriages, intergenerational marriages, poor health-seeking behaviors, and the suppression of women's sexual reproductive health rights (SRHR) (33). Despite the predominance of Christianity, African Traditional Religion (ATR) profoundly influences the daily practices and beliefs of Zimbabweans. Together with Christianity, ATR perpetuates cultural norms that often include harmful practices, making young women susceptible to HIV. The status of women in Zimbabwe characterized by patriarchal dominance, gender stereotyping, and systematic oppression of women (34). The intersecting issues of gender, culture, religion and create an environment where young women's vulnerabilities to HIV are heightened.

1.5 Health System Overview

Post-independence the Zimbabwean government built health facilities and enacted health policies that benefited the black majority with 85% of the people living near a health center (32). However, due to the poor socio-economic conditions, the health system plummeted as evidenced by life expectancy and, maternal and infant mortality rates (31, 32).

The health indicators depict a high disease burden and health system context within which HIV responses are being implemented. The maternal mortality rate increased from 283 per 1000 in 1994 to 555 deaths per 1000 live births in 2005. Mortality rates tripled among adults from 286 per 1000 in 1990 to 751 per 1000 in 2006 (31). Infant mortality rates are 4 times higher in infants whose mothers are HIV-positive (32). The fall in vital statistics is attributed to diminished access to health care, brain drain, closure of public hospitals, and prohibitive medical care costs. Malnutrition and high HIV prevalence are factors contributing to declining life expectancy rates (31).

The health financing system is mostly out of pocket. The country does not have a national health insurance scheme (22). This creates barriers for young women who are unable to access HIV-preventative services due to the high rates of unemployment and low socioeconomic status for much of the general population. Interventions responding to HIV in Zimbabwe have been supported by the public and private se

ctors, nongovernmental organizations, formal and informal institutions, and intergovernmental organizations such as UNAIDS, PEPFAR, UNICEF, and WHO (32).

Table 1: Health Facilities in Zimbabwe

| Secondary Health Care Facilities | Urban | Rural | Primary Health Facilities | |
|----------------------------------|-------|-------|---------------------------|-----|
| Central Hospitals | 6 | 0 | Clinics | 158 |
| Provincial Hospitals | 8 | 0 | Polyclinics | 5 |
| District Hospitals | 22 | 22 | Mission Clinics | 0 |
| Mission Hospitals | 0 | 62 | Municipal Clinics | 96 |
| Rural Hospitals | 0 | 62 | Rural Health Centers | 0 |
| Total | 36 | 146 | Total | 259 |

1.6 HIV In Zimbabwe Overview

The HIV epidemic is heterogeneous with high prevalence in small towns, farming estates, and mines located in the rural areas. At the provincial level, Matabeleland South has the highest prevalence of HIV(31) . The national incidence declined by 50% over the past 10 years with adult prevalence falling from its peak of 26.5% in 1997 to 11% in 2021 (35). According to the incidence Patterns Modelling report, never-married females (adolescent girls and young women) contributed the highest proportion of new infections, whereas men who had been previously married who were uncircumcised contributed to 19%, and the never-married men who were also uncircumcised contributed to 19% of the new infections (18). Together these three groups account for 62% of the total new infections showing that age and the characteristics of male partners are important factors in HIV transmission in Zimbabwe. The HIV prevalence of young females is twice as high as that of males in the same age group. The figure below shows HIV prevalence by province.

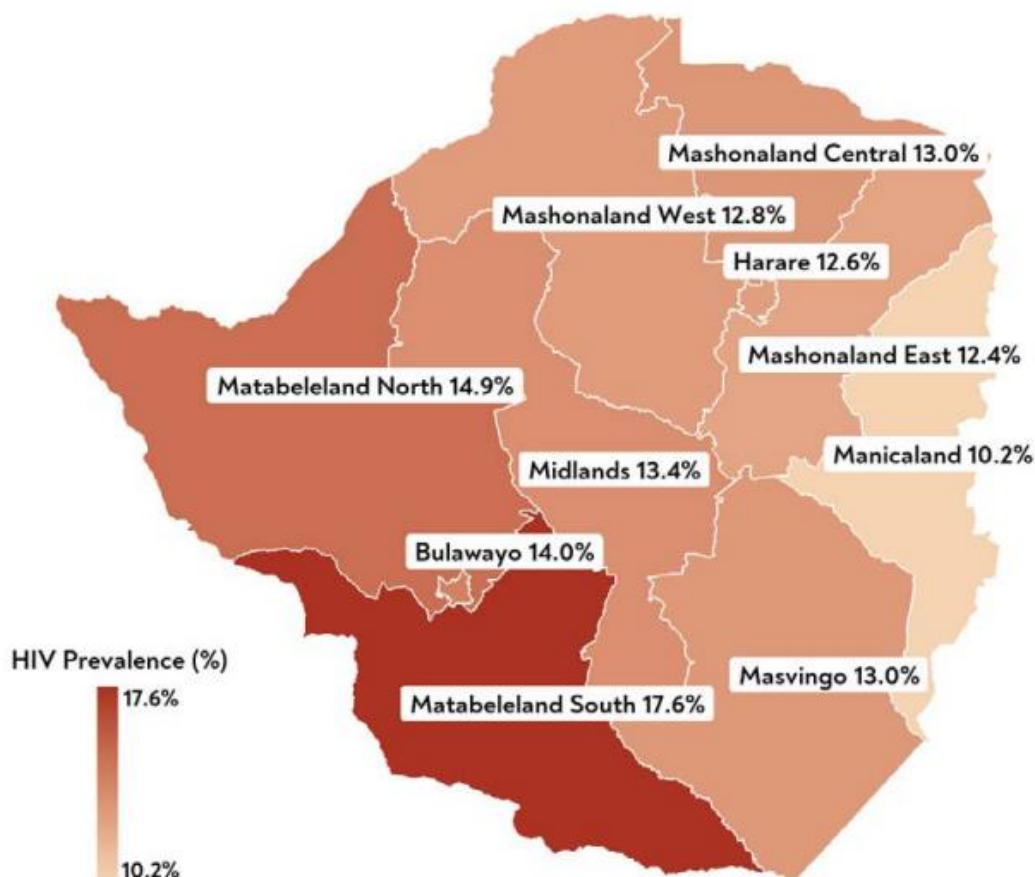


Figure 2: HIV prevalence among adults by province

Source : Zimbabwe Demographic Health Survey (2015) Final Report (30)

Chapter 2: Problem Statement, Justification and Objectives

2.1 Problem statement

Zimbabwe has made significant progress in HIV management between 2010-2022, with AIDS related deaths reduced by 64% and HIV incidence in the general population reduced by 60 % (29). Despite these achievements, Zimbabwe remains off track to end AIDS as a public Health threat by 2030. The country has one of the highest prevalence and incidence rates among young women in Sub Saharan Africa (SSA) (29). Young women remain disproportionately affected by the epidemic, with a prevalence rate higher (14.7%) than men (8.7%) (20). Among individuals aged between 15-19, incidence rate among women is six times higher than that of men in the same age bracket. (20, 21), reflecting a concerning trend in HIV transmission dynamics in Zimbabwe. The age – related disparity highlights the need for targeted interventions to address the vulnerability of young women to HIV.

Gender disparities in decision making power regarding sexual reproductive rights, economic opportunities and education aggravate this vulnerability leading to a disproportionately high prevalence and incidence rate among young women compared to their male counterparts in the same age group (36). The high rates of HIV transmission among young women pose significant public health challenges, contributing to sustained transmission within communities and across generations. This negatively affects the affordability and sustainability of national anti-retroviral treatment programmes (ART) and puts a strain on the whole health system (37). Moreover, HIV related mortality has been the highest among women of reproductive age for the past 10 years (36).

Understanding the contextual vulnerabilities of young women to HIV is crucial, given the interplay of social, legal, individual, and economic factors. There is considerable heterogeneity in where and among whom HIV infections occur with people in certain areas being more vulnerable than others (5). While studies in southern Africa have shed light on the vulnerabilities of young women to HIV, there is lack of research specific to Zimbabwe. Young women in Zimbabwe face intersecting vulnerabilities that compound their risk of HIV infection and hinder access to prevention, treatment and supporting services.

This study intends to bridge this knowledge gap through exploring the intersecting factors contributing to young women's vulnerability of to HIV in Zimbabwe. Reducing this knowledge gap can inform decisions to help reduce new HIV infections among young women and

ultimately in the whole population .The high incidence levels among young women indicates that current approaches are ineffective (16) . To prevent new infections among vulnerable populations, it is important to access information that highlights the specific needs of young women to remain HIV-negative (38). This study will therefore inform policies, guidelines, and programs contributing to reducing the vulnerability of young women to HIV in Zimbabwe.

2.2 Justification

As discussed, young women aged 15-24 are more vulnerable to HIV in Zimbabwe than their male counterparts in the same age group. Despite this reality, no studies have comprehensively investigated the factors heightening the risk of this demographic. This seeks to fill this knowledge gap by providing insights into the factors contributing to young women's vulnerability to HIV in Zimbabwe. Understanding these factors is crucial for designing effective programme interventions to mitigate risk and vulnerability and to develop informed policies, guidelines and programmes that address the specific needs of young women, ultimately contributing to reducing HIV infections in this high-risk group.

2.3 Overall Objective

The overall objective of the study was to analyse the factors contributing to the increased vulnerability of young women aged between 15-24 years to HIV infection in Zimbabwe to inform policies, guidelines and programmes designed to mitigate the vulnerability of young women to HIV in Zimbabwe.

Specific Objectives

- To investigate the individual factors contributing to heightened vulnerability of young women to HIV infection in Zimbabwe.
- To analyse the role of social and structural factors in shaping the vulnerability of young women to HIV in the Zimbabwean context.
- To assess the health system service factors and their influence on the vulnerability of young women to HIV.
- To inform policies, guidelines and programmes designed to mitigate the vulnerability of young women to HIV in Zimbabwe.

Chapter 3: METHODS

3.2 Research Methodology

This chapter outlines the research methodology used in the study.

3.2.1 Research Design

An exploratory literature review on the factors contributing to the vulnerability of young women to HIV was done in the context of Zimbabwe. The review included various relevant literature including peer-reviewed articles, grey literature, and public health and epidemiological data. Additionally, a qualitative study was done to get in-depth insights through semi-structured interviews (SSIs) with key informants. The research methods and link to the study objectives is shown below.

Table 2: Mapping of research objectives to data collection approaches

| Specific Objectives | Peer-Reviewed Literature | Grey literature | Public Health and Epidemiological Data | SSIs |
|---|--------------------------|-----------------|--|------|
| To investigate the individual factors contributing to the heightened vulnerability of young women to HIV infection in Zimbabwe. | ✓ | ✓ | ✓ | ✓ |
| To analyse the role of social and structural factors in shaping the vulnerability of young women to HIV in the Zimbabwean context | ✓ | ✓ | ✓ | ✓ |
| To assess the health system service factors and their influence on the vulnerability of young women to HIV. | ✓ | ✓ | ✓ | ✓ |
| To inform policies, guidelines, and programmes designed to mitigate the vulnerability of young women to HIV in Zimbabwe. | | | | |

3.3 Literature review search strategy

The literature search was done on Scopus, Pub Med, Research Gate, Google Scholar, and the VU library, alongside organisations’ databases including WHO, UNAIDS, UNICEF, UNFPA and PEPFAR, and the Zimbabwean government’s official platforms to expand the search. This ensured that the study gathered a diverse range of relevant literature to enhance the findings and provide a comprehensive understanding of the research topic.

Key search terms used were “HIV”, “vulnerability”, “risk”, “young women”, “adolescent girls and young women”, “Zimbabwe” and “Sub-Saharan Africa”. These terms were searched in combination with layers of the conceptual framework as shown below:

Table 3: Search Criteria

| Theme | Key Search Terms | Boolean Operators |
|---|--|-------------------|
| HIV/Aids Related Terms (Theme 1) | HIV risk, HIV susceptibility, HIV infection, HIV exposure | OR |
| | | AND |
| Target Group (Theme 2) | Young Women, Adolescent Girls, Youth, | OR |
| | | AND |
| Determinants, Risks/ Vulnerability (Theme 3) | Individual, Interpersonal, Institutional, Structural, Community, Behaviours, economic, cultural, social norms, Religion, Intimate Partner Violence, Sexual norms, Gender roles, Intergenerational Relationships, policies, laws and legislation, Partner Characteristics | OR |
| | | AND |
| Target Geographical Area (Theme 4) | Zimbabwe, Sub Saharan Africa, Southern Africa | OR |

3.3.1 Inclusion and Exclusion Criteria

Literature in English from the years 2013-2024 was included in this study to ensure relevance of the findings. However, articles deemed very important published outside these dates were also included in the study. The literature review included studies with qualitative, quantitative and mixed methods. Title and abstract reviews were done to exclude literature based on relevance, language, geographical location, and focus. Thereafter further exclusion was done by fully reading the articles. The figure below shows how data was gathered using a Prisma flow.

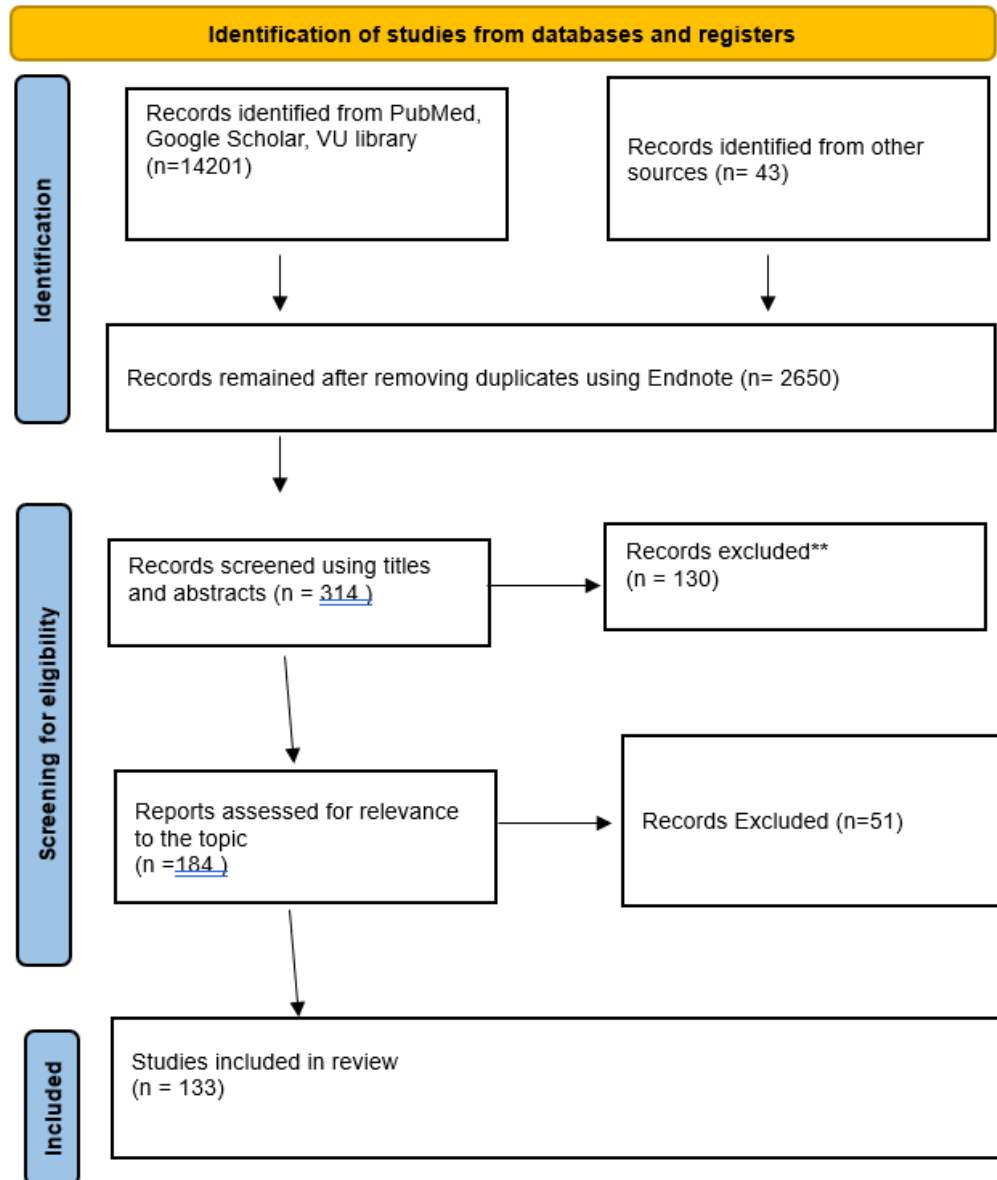


Figure 3: Prisma Flow

Source: Page et al. (39)

3.4 In Depth Interviews Study Design and Settings

Twenty semi-structured in-depth interviews with key informants were conducted between June and July 2024 to provide expert perspectives on the factors contributing to the vulnerability of young women to HIV in Zimbabwe.

3.4.1 Study Area

The study area consisted of five out of ten provinces in Zimbabwe which are Mashonaland West, Mashonaland Central, Harare, Matabeleland North and Matabeleland South. The

provinces were selected using random sampling to ensure an unbiased and representative sample.

3.4.2 Study Population

Target population for the in-depth interviews consisted of healthcare providers who possessed specific knowledge and experience relevant to the study's objectives. The participants were made up of nurses, mentors and counsellors who directly work in HIV/AIDS testing, prevention and treatment programmes. Eligible participants met the following criteria:

- Expert knowledge: Possessing knowledge about HIV, clinical, social, and behavioural aspects and can identify gaps in existing interventions.
- Access to data: Having access patient trends and data to provide evidence-based perspectives on factors contributing to young women's vulnerability to HIV in their communities.
- Direct Interaction: Regularly interacting with young women at risk of contracting HIV and those living with HIV enable them to provide first-hand accounts of the challenges faced by this demographic.
- Cultural and Social Context Understanding: Being familiar with the local and cultural context to provide insights into the broader factors influencing HIV vulnerability.
- Interdisciplinary Perspectives: Representing diverse healthcare backgrounds to ensure a comprehensive analysis of the issue.

3.4.3 Sampling and Recruitment

The study recruited twenty participants for the study comprising of nurses, mentors and counsellors. Key informants were purposively sampled to ensure inclusion of healthcare providers with the most relevant and extensive knowledge on the study problem. Recruitment of participants continued until saturation was reached to ensure a sufficient sample size to capture diverse perspectives while maintaining depth in data collection. Recruitment of participants was done through collaboration with provincial and district authorities managing HIV/AIDS in the health system.

3.5 Data Collection and Quality Assurance

The researcher conducted semi-structured interviews (SSIs) with key informants virtually through zoom and WhatsApp platforms. Interviews were done in English which is the official

language of Zimbabwe. The duration of interviews was between 30-45 minutes. Data was collected through an interview topic guide which was structured into open and closed ended questions to encourage participants to provide comprehensive and detailed responses while giving room for the researcher to explore new themes. Consent to have the interview and record audio and notes was taken before the start of the interviews. Anonymity and confidentiality were ensured by not using any personal identifiers and not sharing personal information.

3.6 Data Processing and Analysis

Data collection and transcription was done in tandem. Transcription was done using the Microsoft word dictate feature and manually for accuracy. The study utilised a manual thematic analysis approach to analyse the qualitative data gathered from key informants. The researcher read the transcripts several times to familiarise with the results and identify common themes based on the layers of the conceptual framework. Summaries of the themes were written, and interactions and relationships between themes were identified to contextualize findings with existing literature. Data analysis began during data collection to ensure that any unanswered questions or emerging questions could be addressed before the end of data collection.

3.7 Ethical Considerations

A waiver application was made to the KIT Ethics Board and granted. Informed consent was sought from the participants before the interviews. The identity of the participants was protected, and transcripts contained no identifiers to protect the anonymity of the participants.

3.8 Conceptual Framework

To conduct the study, the health behaviour change model for HIV prevention and treatment by Kaufmann et al. (1) was used. This framework was used to fully examine the intersecting factors that explain young women's vulnerability to HIV by analysing the interactions across the individual, interpersonal, institutional, community, and public policies that place women at risk for HIV acquisition. The framework is based on the understanding that while individual-level risks are necessary for the spread of a disease, they are not sufficient to explain population-level dynamics. Therefore, the higher levels of social and structural levels of risk (network, community, policy, institutional) represent the risk factors that cannot be controlled by an individual. While the various layers are interconnected, they will be discussed separately and will address one or more of the specific objectives of this research. The application of the framework is discussed below:

a) Individual factors

These are biologic or behavioural characteristics associated with the vulnerability to acquire or transmit an illness or infection (40). In the context of this paper, these include knowledge and attitudes about HIV, low and inconsistent condom use, alcohol and substance abuse, multiple and concurrent partnerships, age of sexual debut, transactional sexual behaviours and participation in sex work. This layer will respond to the first objective.

b) Interpersonal Factors

Interpersonal factors refer to social and community networks which reinforce social norms and behaviours that are protective against vulnerability or that can predispose people to vulnerability and risk (40). In the context of this paper, they refer to the relationships that young women have with their sexual partners including characteristics of male partners, Intimate partner violence (IPV), gender-based violence (GBV), and intergenerational relationships. This layer is aligned to objectives two.

c) Community Factors

The community environments can promote health outcomes or can be a source of risk for the acquisition and transmission of HIV (40). Under this layer, gender norms and power imbalances, sexual norms, stigma and discrimination, marriage practices and religion will be discussed. This layer will answer objective two.

d) Institutional Factors

These are factors within the health system. It includes availability, accessibility, affordability, acceptability and quality of health services factors. This layer will answer the third objective of this study.

e) Structural factors

Structural factors are important in shaping the risk of vulnerable populations to HIV. In this study, structural factors include socio-economic conditions, laws and policies and education. These factors affect individual behaviours which can increase or reduce the risk of young women to HIV. This level responds to the second objective of the study.

3.9 Study Limitations

There was insufficient research on HIV/AIDS and young women in Zimbabwe hence the study also utilized literature from SSA which may make it difficult to generalise and apply results to the context of Zimbabwe. The conclusion drawn from the studies also has a chance of potential bias since HIV/AIDS is contextual and the situation may not always apply to large groups.

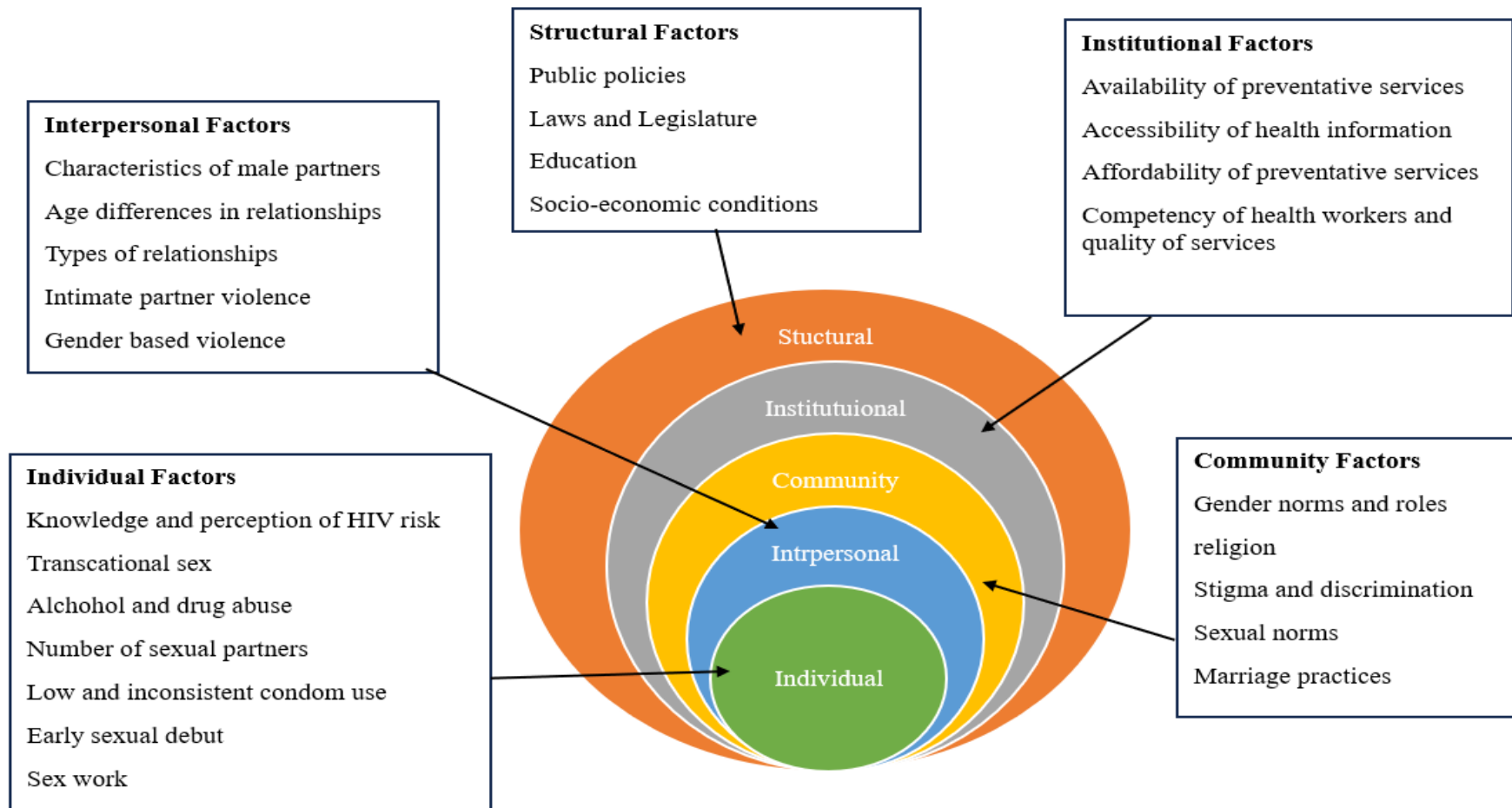


Figure 4: Conceptual Framework

Adopted from Kaufman et al. (1)

Chapter 4. Results

This chapter reports the findings based on the layers of the conceptual framework to answer the study objectives. It explores the individual, interpersonal, community, institutional and structural factors contributing to the vulnerability of young women to HIV in Zimbabwe.

The results are derived from the in-depth interviews with key informants and literature review. Fifteen KIIs comprising of nurses, counsellors and young women mentors working on HIV prevention and treatment programmes were interviewed using a semi-structured interview guide. The guide covered all the aspects of the conceptual framework used in this study. Key informants had 3-10 years of experience working in the HIV programme in Zimbabwe

Table 4. List of Key Informants

| Participant code | Job Function | Age | Gender | Province | Duration of work |
|------------------|--------------------|-----|--------|--------------------|------------------|
| K-1 | Nurse | 29 | Female | Matabeleland South | 4 |
| K-2 | Nurse | 24 | Female | Matabeleland South | 5 |
| K-3 | Primary Counsellor | 33 | Female | Matabeleland South | 6 |
| K-4 | Primary Counsellor | 25 | Female | Matabeleland South | 5 |
| K-5 | Nurse | 33 | Female | Mashonaland West | 4 |
| K-7 | Mentor | 37 | Male | Mashonaland West | 5 |
| K-8 | Primary Councillor | 47 | Female | Mashonaland West | 9 |
| K-9 | Primary Counsellor | 33 | Male | Mashonaland West | 5 |
| K-10 | Nurse | 25 | Female | Harare | 4 |
| K-11 | Nurse | 27 | Female | Harare | 4 |

| | | | | | |
|-------|--------------------|----|--------|---------------------|---|
| K-12 | Primary Counsellor | 24 | Female | Harare | 5 |
| K-13 | Primary Counsellor | 27 | Female | Mashonaland Central | 5 |
| K-14 | Primary Counsellor | 35 | Male | Mashonaland Central | 4 |
| K-15 | Nurse | 44 | Male | Mashonaland Central | 4 |
| K-16 | Nurse | 23 | Female | Mashonaland Central | 3 |
| K-117 | Primary Counsellor | 24 | Female | Bulawayo | 6 |
| K-18 | Primary Counsellor | 24 | Female | Bulawayo | 6 |
| K-19 | Nurse | 26 | Female | Bulawayo | 4 |
| K-20 | Mentor | 45 | Female | Bulawayo | 5 |

4.1 Individual Factors

This layer discusses early sexual debut, knowledge and perception of HIV risk, transactional sex, alcohol and drug abuse, concurrent and multiple sexual partners and condom use.

4.1.2 Comprehensive Knowledge on HIV transmission and Prevention

According to a needs assessment by UNICEF, the vulnerability of young women in Zimbabwe stems from their limited knowledge of HIV risks and underlying vulnerabilities that limit their ability to protect themselves or seek services (41). Several other studies in SSA suggested that inaccurate knowledge about HIV knowledge and prevention methods among young women is one of the major contributions to their vulnerability to HIV risks (42).

In 2015, the ZDHS survey indicated that less than 50% of young women in Zimbabwe had comprehensive knowledge about HIV transmission and only 47% knew a place to get a condom (30). Socio-demographic factors showed disparities in levels of HIV knowledge among young women. Those in urban areas had higher knowledge (66%) than those in the rural area (51%); those aged 15-19 years had lower knowledge (51%) than 20- to 24-year-olds (62%); those with higher education levels had the highest knowledge levels (84%) than those with primary

education (43%); and those from the poorest quintile had lower knowledge (47%) compared to those in the highest quintile (65%) (30).

In their cross sectional analysis of Zimbabwean demographic data, Pachena and Musekiwa (43) found that an increase in comprehensive knowledge about HIV increased the odds of protective behaviours such as condom use, HIV testing with new partners and use of HIV prevention services. Women who had comprehensive knowledge on HIV/AIDS were more likely to have safer sex negotiation in Congo, Gambia, Guinea, Liberia, Ethiopia and Malawi (44). The in-depth interviews with key informants supported the above findings noting that many young women in Zimbabwe do not have comprehensive information about HIV transmission and prevention. It was highlighted that comprehensive knowledge of HIV transmission and prevention can reduce risky behaviours among young women. One informant noted,

“Most young women do not have adequate knowledge on HIV transmission and prevention methods, most of them are not even aware that PREP and condoms are given for free in most public clinics, awareness is crucial for these measures to be used and reduce HIV risk” (Key informant 2).

On the contrary other studies, have shown a continuation of high-risk behaviours among young people with comprehensive knowledge and information about how to prevent HIV (45).

4.1.3 Perception of risk

One of the causes recorded on the increased HIV vulnerability in a needs assessment of young women in Zimbabwe is that of low self- risk perception of HIV and other sexually transmitted infections (41) . A latent class analysis of SSA associated high risk perception with protective behaviours such as consistent and correct condom use, use of pre-exposure prophylaxis (PREP) and awareness of HIV status of partner (25, 46). In Kenya, young women with low risk perception correlated with a number of risky factors (47). Conversely, low perception of risk was found to increase the likelihood of engaging in risky behaviours (UNAIDS, 2016, Reniers et al 2016). A study in Kwazulu Natal found perception of risk as the most powerful determinant of condom use (48).

Results from the in-depth interviews concur that HIV risk perception is an essential component in HIV prevention. High risk perception increases uptake of prevention services and lowers risky behaviours. Low perception of risk among young women was attributed to cultural

beliefs, lack of knowledge and the misconceptions that young women have about HIV transmission. One healthcare worker provided an example from her discussions with young women in Ante Natal Care:

“Most of the young women in the discussions held incorrect beliefs about HIV believing that they cannot contract HIV from having one sexual partner or one sexual encounter, and other beliefs that washing right after unprotected sexual intercourse can prevent them from contracting HIV” (Key Informant 3).

Similarly, Mavhu et al. (49) reported that risky behaviours among Zimbabwean women are fuelled by misconceptions and low risk perception. Other studies in Botswana and South found no association between low perception of risk and engagement in risky behaviours such as condom use (48, 50).

4.1.4 Early Sexual Debut

Early sexual debut increases HIV risks among young women (51-53). In 2015, 40% of young women in Zimbabwe reported having their first intercourse by the age of 18 (30) . Similar trends were observed in Eswatini, Tanzania and South Africa (53). Surveys in SSA have shown evidence of association between the age of sexual debut and new HIV infections among young women (54). In Eswatini, Tanzania and South Africa, early sexual debut was linked to higher HIV incidence and in Kenya having sex after the age of 19 correlated with 63% lower odds of being HIV positive compared to having sex before the age of fifteen (53).

Early sexual debut results in vulnerability to HIV due to links with risky behaviours, extended duration of sexual activity and biological factors (4, 55, 56). A review of qualitative research with young women in Zimbabwean urban and peri urban areas linked early sexual debut with HIV risky behaviours such as sex work, alcohol and substance abuse and age disparate relationships (55, 57). In another qualitative study in Harare province, young women cited peer pressure, lack of adult supervision, curiosity, need for financial favours and the collapse of the family system as reasons why they engage in early sexual debut (58). Chemhaka and Simelane (53) added that patriarchal and cultural contexts, gender dynamics and socio-economic factors influence the timing of sexual debut.

These findings align with previous studies suggesting that early initiations of sexual activity increase vulnerability to HIV (54). In Nigeria, early sexual debut was linked to having two concurrent partners and more than three life partners raising HIV risk (59). In-depth key

informant interviews noted that differences exist in the drivers of early sexual debut according to residential area, in rural Zimbabwe, poverty and cultural dynamics drive young women into early sexual activity for financial support while in urban areas, peer pressure and social media are more influential. Other informants stressed that young women are unaware of the dangers of early sexual debut. Key informant 2 stated,

“Many young women in our community are not taught about the importance of delaying early sexual debut as a preventative behaviour against HIV, they are taught to delay sex until marriage, as a result they engage in early sex without knowing its association with HIV”.

4.1.5 Alcohol and Substance Abuse

Several studies in Zimbabwe link substance and alcohol abuse to high-risk sexual behaviour and HIV vulnerability (60, 61). Youth drug and alcohol problems have risen from 43% in 2017, 45% in 2018 to 57% in 2019 (60). In Manicaland Province three studies found consistent positive associations between alcohol and substance abuse and several high-risk behaviours, including ever having sex, early sexual debut, number of non-regular partners, transactional sex (61-63). Notably, 52% of the young women who abused substances reported having multiple sexual partners (62).

A few key informants supported these findings, noting that healthcare workers often see young women under the influence of substances and alcohol engaging in unprotected sex, multiple partnerships and in some instances became victims of sexual violence. One informant recounted a case where a young woman, intoxicated at a party had unprotected sex with multiple men.

“This young girl was heavily intoxicated and ended up having sex with more than four men without protection, since she was under the influence of substances her situation qualified as rape. She later tested HIV positive as she reported her case long after which she could have been given PREP” (Key informant 9).

4.1.6 Inconsistent condom use

Correct and consistent use of condoms can prevent HIV by more than 90% (50), However, in Zimbabwe condom usage among young women is very low. All respondents highlighted inconsistent and lack of condom as significant risk factors. This is evidenced by the ZDHS findings, which reported condom use among women (50%) to be significantly lower compared

to young men (81%), with usage the lowest among young women with not more than secondary education (30) . Among young women who had more than one sexual partner, only 43% compared to young males reported using a condom the last time they had sex (30) . Conversely, a Malawi study reported higher inconsistent condom use among young women with a secondary or higher education (64).

The Zimbabwe Population Based HIV Impact Survey (ZIMPHIA) findings provided quantitative evidence linking inconsistent condom use and increased risk of HIV infection among young women (2). HIV prevalence was 37.9% among those who did not report condoms use compared to 9.3% among consistent users. Similarly, in South Africa, low and inconsistent condom use was also associated with high HIV risk (62).

Other studies in South Africa, Botswana and Malawi attributed low and inconsistent condom use to lack of perceived risk of infection, stigma and discrimination, lack of information and gender power imbalances (50, 64). Key informant interviews confirmed low and inconsistent condom use among young women, attributing it to lack of comprehensive HIV knowledge, stigma and discrimination and power dynamics in age disparate and transactional relationships. One informant noted,

“Many young women are not fully informed the effectiveness of correct and consistent use of condoms especially those with minimum education and this increases their HIV risk” (key Informant 6).

Another added,

“Even when they have adequate knowledge about correct and consistent condom use, young women do not have the power to initiate condom use due to their age and fears that their partner will withdraw benefits or end the relationship” (Key informant 10).

4.1.7 Engagement in sex work

In a qualitative study with young female sex workers, Crankshaw et al. (57) found a high prevalence among young female sex workers in Zimbabwe, with UNAIDS (65) reporting an HIV prevalence as high as 50%. Studies show that young female sex workers (18-24 yrs.) were 4.2 times more likely to be living with HIV than peers who do not sell sex (57, 66). In SSA, young women who sell sex experience a 12 fold higher prevalence of HIV (56).

Young women selling sex become more vulnerable due to distancing themselves from the sex worker identity limiting them from accessing targeted interventions. (66). Crankshaw et al. (57) added that increased vulnerability among sex workers is due to less control over working conditions, susceptibility to sexual violence and reduced ability to negotiate condom use. As one informant noted,

“Young women in sex work have little control over the number of clients they see or the conditions under which they work, this exposes them to higher risks of HIV as they often cannot negotiate condom use and sometimes, they face sexual violence” (Key informant 5).

In a qualitative study, their study with young female sex workers, young female sex workers confirmed using drugs to reduce shyness and increase confidence while selling sex (57). Key informants discussed how alcohol and substances abuse compounds HIV risk due to the nature of sex work and behaviours associated with being intoxicated. Despite knowing the dangers of sex work, young women in Zimbabwe are driven by the economic situation, youthful age, consumptive needs and peer pressure (57, 67). One healthcare worker stated,

“Young women are often influenced by their peers who are already in the sex trade making it seem like a viable option for quick money.” (Key Informant 9).

4.1.8 Transactional Sexual Relationships

Transactional relationships contribute significantly to the vulnerability of young women to HIV. A cross sectional behavioural study with young women in Kenya indicated that young women who have transactional sex outside of sex work have a 2 fold higher risk of HIV compared to those who never engage in transactional sex (56). In South Africa, young women who engaged in transactional sex were 3 times more likely to be infected with HIV than their counterparts who did not (68).

Several studies linked transactional relationships with other HIV risky behaviours. In Uganda, young women in transactional relationships had more than 5 sexual partners compared to 1.8 for those who did not, and were less likely to use condoms (69). In Zimbabwe, transactional relationships often involve immediate sexual activity, hindering preventive measures (49). Key informants concurred with the literature findings and attributed the vulnerability of young women in transactional relationships to reduced power and inability to insist on condom use. One informant remarked,

“In transactional relationships, the young women often have no say in whether to use protection or when to have sex. The men who provide financial support, dictate terms of sexual encounters and young women agree as they fear having the benefits withdrawn” (Key informant 2.)

Elmes et al. (70) attributed the high prevalence of transactional relationships to Zimbabwe’s economic difficulties. Some young women are forced and coerced into transactional relationships by their parents and families for economic support (23). The UNAIDS (12) affirms that the desire to uplift social status, access basic needs, and receive material expressions from lovers forces young women in SSA to engage in transactional relationships.

4.1.9 Concurrent and Multiple Partnerships

Concurrent and multiple partnerships increase the risk of young women to HIV. According to the ZIMPHIA report, young women with one sexual partner in the past 12 months have an HIV prevalence rate of 13.2%, while those with more than one partner had an HIV prevalence of 27.9% (2).UNAIDS (11), confirmed that having a greater number of sexual partners or having a history of multiple partnerships is consistently associated with higher levels of HIV acquisition. An analysis of population based surveys in Eastern and Southern Africa found that the odds ratio of HIV infection increased to 2.23 (95% CI 1.03-4.82) when young women had more than one sexual partner (71).

Ramjee and Daniels (72) concluded that concurrent partnerships are powerful transmitters within the community. This is consistent with the views of a key informant who noted that, *“When young women enter into multiple and concurrent sexual relations their likelihood of contacting an HIV-positive partner is very high and also these types of relationships facilitate a faster spread of HIV”* (Key Informant 1).

4.2 Interpersonal

Interpersonal factors are influential in predisposing or protecting individuals within those networks to the acquisition and transmission of HIV. Factors considered for this study are characteristics of male partners, age differences in relationships, types of relationships and intimate partner violence (IPV) and gender-based violence (GBV).

4.2.1 Intergenerational Relationships/ Age Disparate Relationships

In high prevalence settings, the heterosexual HIV epidemic among young women is sustained by the transmission of HIV from older men to younger women (4, 11, 65, 73). In 2015, 17% of young women between the ages of 15-19 in Zimbabwe reported having sex with a partner 10 years or older while this was zero for young men (30). The same report went on to show that young women with first sexual partners at least 10 years older have an HIV prevalence of 23%, compared to 16% for those with peers. Results from a cohort study in Manicaland indicated that increased age gap between partners was associated with a high HIV prevalence among young women (74).

Systematic Reviews and meta-analysis of data in SSA showed significant associations between HIV infection and age disparate relationships among young women (74, 75). Older partners have a high prevalence HIV and power dynamics in these relationships undermine condom negotiation by young women (4, 5, 56, 76), resulting in the increased risk of HIV infection (73). Young women in age disparate relationships report more unprotected sex and transactional relationships compounding their risk to HIV (16, 77).

Several studies attributed intergenerational relationships in Zimbabwe to poverty, orphanhood, and early marriages (37, 78). On the contrary, all the respondents of the in-depth key informant interviews indicated that the strong presence of intergenerational relationships are encouraged by the cultural and religious practices. One key informant noted that,

“Men in our communities are encouraged to engage in relationships with younger females for easy control of the relationships and young women see older men as providers, however, these relationships come with a higher risk of HIV because older partners tend to have multiple sexual partners and a higher likelihood of being HIV positive” (Key informant 4).

4.2.2 Intimate Partner Violence and Sexual Gender-Based Violence

IPV and GBV are significant drivers of HIV infection (79). According to the Zimbabwe Demographic Health survey (30), 1 in 7 women between the ages of 15 and 49 have experienced sexual, physical, and emotional violence within a year, with only 35% seeking after care services (30). The Zimbabwe Young Adult Survey on GBV reported that 9.1% of young females experienced sexual violence compared to 1.1% of young males (80). Among young women who experienced violence, 6.2% were HIV positive compared to 3.8% who had

not experienced violence. Similarly, the ZDHS 2010/11 reported that 18.7 % of women who reported IPV were HIV positive indicating a clear association between IPV and GBV and vulnerability to HIV (81).

GBV and IPV often result in forced unprotected sex, increasing the risk of HIV acquisition (82). Results from a national cluster based cross sectional survey associated IPV with low sexual efficacy, gender inequitable norms and sexually transmitted infections (83). The link between IPV, GBV, and HIV has been confirmed by systematic reviews and meta-analyses (84). In SSA, young women who experienced sexual violence were 3.22 times more likely to acquire recent infection as those who did not (85). In South Africa and Uganda young women who experienced violence were in their lifetime were 1.5 times more likely to have an increase in HIV incidence (86).

Early exposure to violence further raises HIV risk through behaviours like early sexual debut, multiple partners prostitution, and inconsistent condom use coupled with reduced power to negotiate for safer sex (56). Key informants attributed the high-risk behaviours to the trauma, mental health impact and powerlessness that young women encounter after experiencing abuse. One health worker noted,

“Young women who experience violence from their partners find it difficult to insist on condom use or other protective measures, they remain in abusive relationships where they lack power to protect themselves against HIV” (Key informant 5).

Young women in Zimbabwe do not practice safe sex like condom use or up taking and adhering to PREP due to fears of violence within intimate relationships (87).

4.2.3 Characteristics of Male Partners, type of relationship, HIV status of Partner

Partner characteristics increase the vulnerability of young women to HIV by directly exposing them to HIV, involving them in wider sexual networks, fostering sexual risk behaviour, and influencing their decisions (88). For example, young women in South Africa, with circumcised partners had half the HIV incidence compared to those with partners suspected to be HIV positive or known to be HIV positive, who faced a fivefold increase in risk (77).

Key informant interviews added that male partners who are polygamous, promiscuous and in multiple concurrent partnerships also expose young women to a wider sex network which

elevates their risk to HIV. One key informant highlighted the HIV status of partner as another factor. He added that,

“Some men refuse to get tested for HIV and disclose their HIV status and young women fear losing financial support and facing violence hence do not insist on getting tested with their partners or knowing their partners health status.” (Key informant 6).

The nature of relationships, whether married, casual or committed impacts the perception of HIV risk for young women. Studies from Mozambique and Uganda demonstrated that relationships that shift from casual to stable affect HIV risk perception (88). Longer duration of partnerships with older partners were associated with young women’s low perception of risk in South Africa (88). Condom use was found to be lower and inconsistent in non-commercial and regular partnerships (16).

4.3 Community Factors

This layer describes the community influence on the vulnerabilities of young women to HIV. These factors include gender roles and norms, religion, peer pressure and marriage practices and religion.

4.3.1 Gender norms and power imbalances

Gender norms and resulting power imbalances increase the risk of young women contracting HIV (6, 76, 89). The key informant interviews highlighted young women in Zimbabwe are expected to be submissive and naïve regarding sexual matters with men taking the lead. As a result, intimate partner violence is perceived as normal and young women are taught to endure it (27). These norms and societal expectations restrict women’s autonomy making it difficult for them to negotiate safer sex or decline sexual advances (27, 90). A qualitative research in rural Zimbabwe found that young women were unable to insist on using preventive measures despite knowing that their partners were engaging in other sexual relationships (87). This was confirmed by a healthcare worker who noted that,

“Society teaches that women must be submissive to men and hinders their ability to insist on condom use or refuse sex, even when aware of their partners risky behaviours. The men have the upper hand due to societal support in controlling sexual decisions in a relationship, even when they test positive young women always defer treatment to seek permission from their spouses” (key informant 6).

Studies in Malawi, Zambia and Kenya show similar patterns, where uptake of sexual and reproductive health and rights information and preventative methods among young women is hindered by community associations of preventative services with mistrust and infidelity. In Zambia, particularly, young women attribute their risk to HIV to the gender specific expectations that dictate submissive behaviour and limit their voice in sexual decisions (27). UNAIDS agrees that young women are substantially affected by HIV partially due to gender roles that are prevalent in society and the social norms that affect them (11).

4.3.3 Sexual Norms

Sexual norms are a factor which came up as a significant cause of vulnerability among young women. Deeply ingrained sexual norms in Zimbabwe dictates that young women should sexually naive and defer to male partners in sexual decision making, limiting their ability to assert their own sexual preferences or negotiate safer sex practices, leaving them vulnerable to HIV (91). Several studies in Zimbabwe showed that a substantial number of women believe they should not ask their partners to use condoms, even when faced with sexually transmitted infections (82). In depth interviews also added that sexual norms dictate that men can have sex with multiple women and women should only have one sexual partner. Two respondents had this to say,

“Young women shy away from carrying condoms on their person as they are not expected to initiate sex hence carrying condoms might signify that they are promiscuous hence they are always unprepared for sex, they cannot even suggest condom use when their partners have multiple affairs as they believe that the decision to have sex is of men” (Key Informant 1).

Due to sexual norms, young women weigh their perceived risk of acquiring HIV with the social risk of their parents and community finding out hence opt out of preventive services (92). The challenges faced by young women in Zimbabwe are mirrored in other regions. In Zambia, cultural proverbs like “promiscuity of a man cannot break a home” encourage women to accept infidelity from their sexual partners (27). Similarly, in Malawi, parents socialise girls to serve men while boys are socialized to be independent and assertive making girls develop submissive sexual roles disadvantaging young women in sexual negotiations, making it harder to resist unwanted sexual activities and insist on condom use (93).

4.4.4 Marriage Practices

Marriage has been associated with risk of HIV infection in SSA countries (94). According to the key informants, the custom of bride price payment in marriage increases young women's HIV risk by reinforcing their subservient role. Young married women cannot refuse sexual advances or suggest condom use due to fear of violence and divorce (72, 78). This marriage norm correlates with lower condom use among married young women compared to their unmarried counterparts (ZIMPHIA, 2020).

Key informants added that bride price is also responsible for early and child marriages which are risk factors for HIV. According to a key informant,

“Bride price nowadays has become an income generation project for families and when men pay it translates to ownership rights of the young women who then have no power to make sexual decisions that can prevent them from contracting HIV, guardians and parents from low-income households are also motivated by money to marry off young girls to older men to get wealth” (Key informant 1).

The literature supports these findings, showing that young brides often marry older men with multiple sexual partners, further heightening their risk (93, 95). Early marriages also heighten the risk of sexual and gender based violence, a common risk factor for HIV (96).

The acceptance of polygamy within marriage is also a risk factor for young women in Zimbabwe. In Nigeria, polygamous marriage was identified as a risk factor for HIV (94). Polygyny amplifies risky sexual behaviours such as sexual networking and concurrent sexual partnerships, all of which were found to be significantly associated with the risk of HIV transmission.

Other studies, however, contrast that marriage increases vulnerability to HIV, reporting instead that marriage offers protective effects against HIV particularly for young women who marry at an early age (62, 97).

4.4.5 Religion

Religion is a factor which increases vulnerability of young women to HIV (98). As alluded to in the background, most people in Zimbabwe belong to the apostolic sects whose practices facilitates HIV transmission. Young girls in these churches are 4 times more likely marry early, often to older man and are more likely to be in polygamous union and have a low education levels, all risk factors for HIV (99).

Apostolic sects promote polygamy, with some men having up to 13 wives, creating networks for HIV transmission (100). These sects also forbid biomedical interventions, preventing their congregants from accessing and utilising health information or other preventative services like HIV testing, PREP and condoms (99, 100). Study found that when compared to young women from other religions, 47% of young women from the apostolic sects had comprehensive knowledge of HIV against 68% of other religions. These churches discourage education for young women, promoting early marriages instead (100).

Key informants concurred with the above findings, adding that young women in apostolic sects are often forced and tricked into marriage through fake prophecies by older men in the church who handpick wives from young virgin girls with the support of family members and community. Other studies in Ethiopia and South Africa however, found that religion which enforces sexual morality and abstinence protects youths from risky behaviours (101, 102)

4.5 Institutional Factors

The institutional factors considered for this study relate to the health system. They include factors regarding availability, affordability, acceptability, appropriateness and quality of health services.

4.5.1 Availability of Health Information

While knowledge and awareness among young people in Zimbabwe has remained high, comprehensive knowledge that promotes safer sex behaviours is lacking. According to the ZDHS (2015) report, only 46% of young women have comprehensive knowledge of HIV (30). Comprehensive health information is essential for young women to be prepared for the biologic and psychological changes they experience during puberty which increase their vulnerability to HIV (103).

In depth interviews emphasized that inadequate health information is a major contributor to the increased vulnerability among young women. A health worker noted, *“health information is no longer available as when HIV first emerged in the country. Even primary school children knew about HIV due to awareness campaigns, dramas, adverts and radios being done by the Ministry of Health. Nowadays, the government is no longer funding this, and NGOs are more focused on the already positive population, the young population now relies on information from peers which mostly leads to misconceptions”*. (Key Informant 5)

4.5.2 Affordability of Health Services (Direct and indirect costs)

The results findings indicate that level of income is an important determinant for accessing HIV prevention services. Qualitative Studies with young women and healthcare providers in rural and urban Zimbabwe indicated that costs associated with healthcare facilities and user fees, particularly in rural areas prevent access to preventative services (78, 104). These findings were supported by respondents to the in-depth interviews who reiterated that the out-of-pocket fees prevent young women, particularly those from low-income households from accessing services. According to one key informant,

“Most HIV prevention services are free, however for young women to access the health care facilities, they need to pay some money for registration which is in United States Dollars and is expensive for many, additionally in the rural areas where user fees are very low or non-existent, young women must pay transport costs which are very expensive because of long distances. As a result, young women are left out of benefiting from preventive services which could reduce their vulnerability to HIV infection” (Key informant 5).

4.5.3 Availability of prevention Services

Reducing HIV incidence among young women can be done through increased coverage of prevention methods including condoms and oral pre-exposure prophylaxis (PREP) (66). Although preventative services have been introduced in Zimbabwe, clinical trials have shown poor evidence regarding PREP among young women (87). UNAIDS has reported on inconsistent availability of preventative services in SSA including Zimbabwe(6)

A study in Uganda, South Africa and Zimbabwe, also highlighted that the access points of preventive services are a major barrier since most preventive services are located at opportunistic infections clinics and departments hence young women are afraid of being recognised by community members or being mistaken for accessing HIV treatment services (105). Additionally, key informants also cited occasional shortages of preventive services as a significant barrier there by increasing the risk of young women to HIV. The following quotes bear witness:

“We sometimes run out of drugs, HIV test kits and condoms due to poor planning and national shortages since the drugs are donor funded, when young women fail to get these drugs, they do not come again due to the difficulties they incur to get here”. (Key Informant 12).

4.5.4 Staff competencies and quality of services

A midterm review of the Zimbabwe SRH strategy (2010-2015) revealed a lack of appropriate and acceptable health services for young women, increasing their vulnerability to HIV due to negative attitudes of healthcare providers. These attitudes are closely related to societal stigma as clinical and non-clinical staff reflect community biases in their service delivery (92).

A qualitative study in rural and urban areas found that young women avoided preventive service and health information due to provider's breach of confidentiality, chastisement for premarital sex and refusal to provide PREP or condoms (106, 107). Consequently young women weighed their risk of HIV infection against the risk of their parents and guardians discovering their sexual activity (105). In Ethiopia and Uganda, young women indicated lack of dedicated space for young people and staff shortages as a barrier to accessing services (108).

These findings are confirmed by healthcare workers in a cross sectional qualitative study in Zimbabwe, Kenya and South Africa who acknowledged that their community ties influenced their perceptions of young women's sexuality (109). Similarly, a mixed- methods study in Tanzania found that providers associated young women seeking preventative services with promiscuity, believing it would lead to increased sexual activity (3).

In-depth interviews confirmed these findings, highlighting bias toward unmarried young women seeking HIV services and a lack of training for providers. Other key informants highlighted that the deficit of healthcare workers particularly in rural areas due to brain drain resulting from poor socio-economic conditions in Zimbabwe hence there are inadequate people to provide care resulting in long waiting times and lack of friendly services due to frustration. One key informant stated,

“Most of the healthcare providers are not adequately trained to provide services to young women especially those that are new in service. It has been a while since we attend trainings or refresher courses due to financial constraints and lack of funding from government and this greatly affects the quality of care needed by young women. Also, at this clinic there are only two nurses on duty everyday so we never have time to counsel or attend to young women seeking preventative services hence we advise them to abstain” (Key informant 5).

4.6 Structural Factors

Structural factors provide the general framework through which the risk of individuals is shaped. Structural drivers lead to early, coerced, and intergenerational sex; transactional sex;

child marriage; and gender-based violence and exploitation (110). This layer discusses laws and legislature, education, public policies and the economic environment using findings from the literature review.

4.6.1 Laws and Policies

Public policies and laws significantly influence young women's risky behaviours and their ability to protect themselves from HIV risk. In Zimbabwe, laws and policies often exclude young women essential HIV prevention services (111). For instance, age of consent laws limit access to HIV testing and other services for those below the ages of 18 without guardian consent (106, 112). Access to HIV testing is crucial for HIV care and prevention (113). Restrictive policies and laws have a disproportionate impact on young women by denying them vital sexual and reproductive health information and services, thus impeding their sexual autonomy (12).

Zimbabwe's Marriage ACT also perpetuates the vulnerability of young women to HIV through setting the legal age of marriage at 16 while that of boys was 18 (114). Despite a constitutional court ruling against this, no law has been enacted to address child marriage perpetrators (112, 115). Heavy parental involvement deters young women from accessing important SRH services which may protect them from HIV due to fear of disclosure or violence. Scholars suggest that lowering the legal age of consent could have a greater effect on adolescent girls, who are more affected by the HIV epidemic(116, 117) .

Punitive laws also increase HIV vulnerability among young women in Zimbabwe. The criminalisation of sex work under Zimbabwe's Criminal Law Act increases HIV risk (117). A qualitative study done in Harare and Bulawayo revealed that young women who sell sex often conceal their activity, avoiding community and peer education outreach tailored activities. (57). They are less likely to engage with targeted services due to fears of disclosure or unawareness (118, 119).

Key informant corroborated these findings noting criminalisation of sex work prevents access to preventative measures and exposes young women to abuse by law enforcement officers and clients. One informant noted, *"because sex work is illegal, every now and then sex workers are rounded up by law enforcement who force them have sex in exchange of being released, even clients force young female sex workers to have unprotected sex knowing that they will not file any charges against them"* (Key Informant 3).

4.6.2 EDUCATION

Education levels attained by young people have been shown to increase or decrease their vulnerability to HIV (11). Education helps to protect the rights of young women and protects them against HIV (21). Education was brought up by all key informants as important in increasing or decreasing the vulnerability of young women to HIV. Health care workers observed that young women with secondary education were more likely to get tested for HIV, insist on knowing their partner's HIV status and willing to take preventative services without seeking permission from their partners. Such patterns can explain the trends in HIV prevalence in Zimbabwe where young women with primary education have a prevalence of 9.2% while those with more years of schooling had a prevalence rate of 2.8 % (ZDHS, 2015). A study in Kenya also found an association between higher levels of education and lower HIV prevalence (120). In South Africa, 1 in 3 young women who had not completed secondary education had a risk of acquiring HIV 89% higher than their counterparts with secondary education (77)

Evidence from SSA show that for countries with a generalized epidemic like Zimbabwe, vulnerability to HIV is reduced by school attendance and educational attainment (76). In South Africa, higher education levels were associated with changes in sexual behaviours, delayed marriages and increased uptake of preventative measures (62, 121). Men in Mozambique, were less likely to use condoms with young women who were out of school or had a low educational attainment (121). A study in Malawi found that that inconsistent condom use was more common among women with primary education and from an average household income (64).

However, the insights from some of the key informants concurred with other literature findings that found an association between high education levels and HIV incidence (121). One key informant noted, *"I do not think that education has a bearing on the vulnerability of young women to HIV, most young women from the local university positive for HIV and other STIs frequently and engage in reckless behaviours such as transactional sex, multiple concurrent partnerships and drug and alcohol abuse"* (Key informant 9).

4.6.3 Socio - Economic Conditions

Young women's vulnerability to HIV infection in Zimbabwe is closely linked to their social and economic conditions particularly economic dependence on men (76, 110). Zimbabwe DHS data shows that HIV incidence and prevalence is highest among young women from the lowest wealth quintiles (122, 123).

Poverty in Zimbabwe has been associated with early sex debut, coerced sex, transactional relationships and a reduced ability to negotiate and practice safe sex, increasing HIV vulnerability for young women (74, 78). Similarly, in Uganda, girls from the poorest households engage in sex for money, linking transactional relationships to poverty Choudhry et al., (2015). In South Africa, poor women more dependent on men found it difficult to suggest condom use and adopted high risky behaviours (62). A qualitative study in Zimbabwe found that lower economic status was linked to all HIV risk factors, including alcohol and substance abuse, transactional relationships, early sexual debut ,lower levels of HIV knowledge and poor condom use (107).Evidence from randomised control studies in Lesotho, Ethiopia, and Kenya show that economic interventions can reduce the vulnerability of young women to HIV (5, 124, 125).

In depth interviews reinforced the impact of economic conditions have on the vulnerability of young women to HIV. Poverty not only affects families but also shape community norms that perpetuate the abuse of women increasing their HIV risk. One informant mentioned,

“Young women tolerate IPV and GBV due to poverty, even when their partners are promiscuous, they are unable to leave such relationships because they have nowhere else to go as they are poor and unemployed. Even some cultural norms that we have that oppress young women’s decision making they are based on the premise that men are providers and women are expected to shut up to be taken care of. If it were not for poverty many young women would not be in early marriages or engaging in early sexual debut increasing their risk of contracting HIV” (Key Informant 5).

Other informants alluded to the fact that poverty not only encourages risky behaviours, but they also limit young women’s access to preventive services. One healthcare worker noted,

“Young women who come from high income households can access preventative services through private operators like clinics and pharmacies where their privacy is protected, they are not asked any questions and are rarely stigmatised as private institutes only care about money. This is different from young women who come from poor households as these preventive services are expensive and out of reach for many” (Key informant 5).

Chapter 5: Discussion, Recommendations and Conclusions

5.1 Discussion

This section presents a discussion of the findings of this study based on the conceptual framework. The findings from the study showed that the vulnerability of young women to HIV in Zimbabwe is a result of complex interactions between the individual, interpersonal, community, institutional and structural factors.

5.1.2 Individual Factors

The results indicated that young women's individual behaviours directly increase their vulnerability to HIV infection. The most influential factors identified were lack of comprehensive HIV knowledge, early sexual debut and lack of and inconsistent condom use due to their interactions with other higher risky behaviours.

The widespread lack of comprehensive knowledge about HIV transmission and prevention among young women results in misconceptions about HIV leading to risky behaviours and hinder the adoption of preventive behaviours such as consistent condom use, regular HIV testing and use of PREP and PEP. Similarly, an analysis of DHS data from 30 countries in SSA showed that young women's limited comprehensive knowledge of HIV and this increases their vulnerability (44). For instance, in Malawi, an assessment of the DHS showed that a third of young women did not know that consistent condom use reduces HIV transmission and a quarter believed that mosquitoes spread HIV (42). These findings show that the fundamental lack of comprehensive knowledge sets the stage for other risk factors to come into play, hence the critical need for programs to improve HIV knowledge among young women.

Key informants had contrary views to the literature citing that even young women with comprehensive knowledge engaged in risky behaviours, indicating that while comprehensive knowledge about HIV is essential to prevent risky behaviours, interventions should not only focus on improving knowledge but on addressing other underlying drivers.

Findings also highlighted the interconnectedness between various individual factors. For example, many young women begin sexual activity before receiving comprehensive sexual education, increasing their lifetime exposure to HIV risk. There was correlation between early sexual initiation and risky behaviours such multiple sexual partnerships, age disparate

relationships, transactional sex and low perception of risk where condom use is unavailable or inconsistent, all of which heighten HIV vulnerability. Similar associations have been observed in Nigeria and Uganda, where early sexual debut was associated with a significant high risk of contracting HIV and other HIV high risk behaviours (54, 59). This underscores the importance of timely and accurate sex education, it also suggested that addressing one factor can positively impact others. For instance, improving comprehensive sexual education will lead to a higher perception of risk, delay sexual debut leading to a reduced number of sexual partners and the incidence of transactional sex.

The findings indicated that individual risky behaviours are influenced by interpersonal, community, institutional and structural factors, highlighting the need for comprehensive interventions.

5.1.3 Interpersonal Factors

While the direct causes of vulnerability among young women are their individual behaviours, interpersonal factors also play an important role in influencing the vulnerabilities of young women to HIV. Factors identified include characteristics of partner and type of relationship, age gap relationships, presence of intimate partner violence and GBV. The most critical issue appears to be the power imbalances in intergenerational relationships and the significant impact of IPV and GBV which create an environment where young women cannot effectively negotiate safer sex practices.

Intimate partner violence and gender-based violence highly prevalent in Zimbabwe heighten the risk for young women through reducing their agency to insist on condom use or end relationships that put them at risk and by increasing the likelihood of forced sex thereby increasing their vulnerability. This finding affirms previous studies that identified IPV and GBV as risk markers for HIV vulnerability. A multi country study by Decker, Peitzmeier (126) associated IPV and GBV with sexual risks while longitudinal studies in Uganda and South Africa found an increase in the likelihood of HIV infection among young women who experienced sexual violence (85, 86). These findings underscore the importance of addressing IPV and GBV in HIV prevention settings. Interventions must consider empowering young women to improve their agency in relationships and reduce associated sexual risks and consequently HIV vulnerability.

The results also support findings that the main driver of HIV pandemic in SSA is intergenerational relationships (4, 5). Studies in Tanzania, Swaziland and South Africa also show evidence that young women whose sexual partners are much older than them have an increased risk of HIV infection (62, 127). In Zimbabwe, young women are driven into intergenerational relationships by economic needs and social pressures which significantly limits their abilities to negotiate condom use. Understanding the factors that drive young women into age disparate and intergenerational relationships is crucial to adequately address the prevention needs of young women.

The findings indicate the need to integrate focused strategies to address the interpersonal dynamics which increase vulnerability to HIV. For example, while comprehensive sexual education factors; used to address the individual factors, it can also be done in such a way that empowers young women to negotiate safe sex and seek help in abusive relationships. Interventions to engage young boys and men in promoting gender inequalities could also be adopted to address both the interpersonal and individual factors effectively.

While these findings highlight the importance of involving male sexual partners in interventions to reduce HIV vulnerability among young women, other evidence from Kwazulu Natal Province found no significant associations with age disparate relationships and HIV infection among young women (128). This can be explained by increased risk perception or careful selection of partners by young women in this area. These contrasting findings indicate the need to study the contextual vulnerabilities of young women in consideration of other factors.

5.1.4 Community Factors

Our results further suggest that various community level factors significantly shape the vulnerability of young women to HIV in Zimbabwe. These factors interact with individual, interpersonal, institutional and structural factors. These factors include sexual norms, gender norms and power imbalances, and marriage practices. entrenched gender and sexual norms that encourage young women to be sexually naïve and pure perpetuate unequal power dynamics in relationships limiting young women's ability to assert their sexual health rights and engage in safer sex practices. Similar findings in Malawi, Zambia and Kenya show that stigmatising norms against young women who carry condoms or discuss sexual health lead to unprotected sex, increased incidence of violence against women and higher HIV risk (27) . these norms often cause women to prioritise social acceptance over their health (UNAIDS 2016).

Marriage practices such as bride price contribute to early and polygamous marriages, reinforcing women as property and limiting their ability to negotiate safer sex or resist unwanted sexual advances. This finding illustrates the intersection of economic factors and cultural factors in perpetuating HIV risk among young women. However, other studies in SSA contrasted with these findings, showing that marriage can protect against HIV infection especially among young women. (62) found that in South Africa, young married women were at low risk of HIV infection when both partners were uninfected at the time of marriage and were exclusive to one another. In Nigeria older single unmarried young women had a higher exposure to more sexual encounters and frequent risky behaviours than their married young peers which increased their risk (97). This may be because early marriages may limit the number of multiple and concurrent sexual partners, a risk factor for HIV among young women. This is also similar to findings from

5.1.5 Institutional Factors

Health system factors significantly impact the vulnerability of young women to HIV in Zimbabwe by affecting access to HIV prevention services and information. Health systems operate with an environment shaped by the social and structural drivers of HIV related inequalities and given the centrality to HIV response they need to be explored. The findings revealed a substantial gap in the availability and access to health information and this results in reliance on peer sourced information which often results in misconceptions about HIV risk.

Findings also highlighted that health service availability and quality of services is compromised by staff shortages, attitudes of health providers and confidentiality. These findings align with previous studies in seven SSA countries, where 90% of participants of Ugandan participants reported negative attitudes from healthcare providers. In Uganda and Ethiopia staff shortages and lack of dedicated space for young people were major barriers to accessing HIV related services (108). Surveys by UNAIDS (22), indicated that stigma and discrimination at the hands of health care providers including denial of care, poor quality care and breach of confidentiality further increase the vulnerability of young women to HIV.

These findings underscore the need to employ a multi-faceted approach within the health system. Funding should be increased to improve access to health information, reduce economic barriers through subsidizing transportation costs and eliminating user fees. Furthermore, there is need to provide specialized training for health care providers to be able to overcome personal and community biases to improve the quality of care received by young women.

5.1.7 Structural Factors

The study results highlight that structural factors contribute to the vulnerability of young women to HIV in Zimbabwe. Laws, policies, education and economic factors were found to influence the individual, community, interpersonal and institutional factors. A key finding was the extent to which legal frameworks specifically those related to age of consent and criminalisation of sex work impact the vulnerability of young women to HIV in Zimbabwe through reducing their access to preventative services and increasing risky sexual behaviours.

In Zimbabwe, age of consent without a legal guardian is 16, similar to other countries with a generalized pandemic (UNFPA, 2017). This limitation in laws and policies increases HIV risk among young women, as many experience sexual debut and marriage before the age of 16 thus fuelling stigma (117, 129) . Restrictive laws requiring parental consent undermine HIV response and have a disproportionately impact young women's ability to protect themselves. Lessons can be drawn from Malawi, South Africa and Uganda who have the legislative provision for age of consent, testing and treatment set to 12 (UNFPA, 2017). However, these countries still have high HIV prevalence and incidence rates among young women, suggesting that improving the age of consent in isolation of other factors contributing to HIV vulnerability will not reduce HIV risk among young women.

The results also indicated a strong presence of young female sex workers in Zimbabwe, and punitive laws against sex work increase their vulnerability to HIV through sexual exploitation by clients and law enforcement and reduced access to preventive services. Legalising sex work , as supported by could reduce the exploitation of young women who engage in sex work and enhance their capabilities to seek preventive services (130).

Consistent with similar studies existing in literature (68, 69), the study found that economic marginalisation exposes young women to HIV risky behaviours and limits their access to health information and preventive services. This is because economic hardships often lead young women to engage in transactional sex, age disparate relationships, multiple and concurrent partnerships, early marriages and sex work to alleviate poverty. These behaviours are associated with other risk factors such as inconsistent condom use and increased likelihood of sexual violence. Additionally, young women from low-income households are often unable to afford the direct and indirect costs of accessing preventive.

Poverty alleviation schemes have been shown to increase uptake and better utilisation of HIV testing and preventive services, reduce early sexual debut and other risky behaviours

in Ethiopia, Lesotho and Kenya (5, 124, 125). For example, cash transfers in Lesotho reduced the probability of acquiring HIV by 25% (125). These findings highlight the need to target young women from poor households to reduce risk of HIV transmission.

The study also found a positive association between education, comprehensive HIV knowledge, improved economic conditions and protective behaviours. Young women with higher education levels were more likely to engage in safer sex practices and access preventive services due to improved economic conditions. This aligns with studies from Kenya, South Africa and Malawi (77, 131, 132), suggesting that higher education increases awareness of HIV risks leading to fewer risky behaviours. Education also empowers young women to be proactive about their health and increases employment opportunities, reducing dependence on men and increasing capacities to access preventive services.

Contrary to these findings, other studies and key informants found no association between education and HIV risk, with some indicating that high education correlated with increased risky behaviours. For instance, in Zambia, young women with higher education levels had the highest prevalence rates compared to those in secondary or your primary schools (133). This disparity indicates that education alone does not translate to comprehensive knowledge of HIV transmission and prevention and a reduction in risky behaviours hence other strategies should be employed to eliminate HIV risk.

5.2 Relevance of Theoretical Framework

The study was guided by the health behaviour change model by Kaufman et al.(1) which examines the drivers of vulnerability to HIV through individual, interpersonal, community, institutional and structural factors as driving the vulnerability of young women to HIV in Zimbabwe. The framework emphasizes the interlinkage of these factors and how they shape HIV risk at the individual level. The framework highlights the importance of considering situational and contextual and structural variables, the reciprocal ties between individuals and their social networks and the need to address the structural factors in order to mitigate HIV vulnerability among young women. Through integrating all these factors, researchers can propose and develop interventions that address the root causes of HIV vulnerability and promote sustainable behaviour change.

5.3 Strengths and Limitations of the Study

This study to the best of my knowledge is the first to provide a comprehensive overview of the factors contributing to HIV vulnerability among young women in Zimbabwe. With HIV

incidence increasing among young women in Zimbabwe and globally, this research is timely and sets a foundation for future studies aimed at reducing the vulnerabilities faced by young women. This study used a rich base of literature including qualitative, quantitative and empirical evidence and this contributes to advancing and synthesising knowledge on HIV risk factors among young women. This provided a comprehensive overview of the factors contributing to the vulnerability of young women to HIV in Zimbabwe and the rest of Sub Saharan- Africa which broadened the research and presented the opportunity for comparative analysis and learning. The use of the socio ecological framework brought structure to the study and ensured that the linkages between the factors were identified and analysed.

However, the study was not without limitations. The study relied on key informants instead of directly engaging with young women directly affected by HIV vulnerability. However, these key informants involved at different levels of the health system worked directly with young women thereby provided valuable insights reflecting the experiences of young women in Zimbabwe. Additionally, the use of snowball sampling in the search strategy may have led to the omission of some relevant studies hence the study included broader Sub-Saharan data and the adapted socio-ecological model and key informants to ensure that the results resonate with the Zimbabwean experience to improve relevance and validity.

5.4 Conclusions

The heightened vulnerability of young women to HIV in Zimbabwe is driven by an interplay of individual, interpersonal, community, institutional and structural factors. Young women are more vulnerable to HIV due to intersecting and overlapping factors beyond their control. A significant lack of comprehensive knowledge about HIV transmission and prevention, especially among rural, younger, and less educated and low-income women, exacerbates their risk. Additionally, the health systems challenges including poor socio-economic challenges, funding issues, and negative attitudes of healthcare workers affect the quality of services thereby limiting the ability of young women to make informed decisions and access HIV preventive services. Therefore, there is need for targeted interventions that enhance gender equality, improve economic conditions, increase access to education and health services, and address harmful cultural norms to effectively reduce HIV risk among young women in Zimbabwe.

5.5 Recommendations

Based on the findings, recommendations are geared towards policy makers, Health Care Providers and HIV future researcher's programmers to reduce the vulnerability of young women to HIV in Zimbabwe.

Recommendations for policy makers (Government and Ministry of Health)

1. Comprehensive Education
 - Strengthen the implementation of HIV and sexual health education programs in schools and communities.
 - Start programs in early adolescence to equip young women with accurate information before sexual debut.
 - Ensure that programs are available to both in school and out of school young women
2. Economic Empowerment
 - Develop and strengthen economic empowerment and social protection programs for young women including vocational training, microfinance opportunities and entrepreneurial support.
 - Provide educational scholarships to keep young women in school to reduce high risk sexual behaviours and improve capacity to access preventive services
3. Legislative Revisions
 - Lower age of consent laws to reflect the current age of sexual debut among young women.
 - Remove punitive laws against sex workers to reduce sexual exploitation of young female sex workers.
 - Enact strict legislation against GBV and IPV to reduce sexual exploitation of young women and discourage community norms supporting violence against women and girls. Sentences for offenders should be harsh such that they are prohibitive.
 - Enact laws and policies against child marriages. Include age limit for customary marriages to reduce exploitation of young women.
4. Health Institution Improvements
 - Enhance capacity of health workers by addressing shortages and improving remuneration.

- Increase health financing for HIV testing, treatment and prevention services to meet the needs of young women.

Recommendations for Implementers (NGOS, Ministry of Health, Private Organisations)

1. Community Mobilization

- Facilitate community dialogues, intergenerational discussions and awareness campaigns to challenge harmful gender norms and cultural practices.
- Engage community and religious leaders, men, boys and women to ensure comprehensive community involvement in HIV prevention efforts.
- Provide community education and engagement to increase HIV knowledge to reduce harmful practices that put young women at risk of HIV

2. Targeting Men as Sexual Partners

- Develop programs specifically targeting the sex partners of young women and promote couples HIV testing and counselling as well as continuing rollouts of voluntary medical male circumcision programmes and retaining HIV positive men on Antiretroviral Therapy.
- Address interpersonal factors influencing young women's sexual behaviours to enhance effectiveness of HIV prevention programmes.

Recommendations for Health Facilities

1. Promote preventative services

- Encourage condom use, PrEP and PeP, ensuring that these services are accessible and acceptable to young women through establishing youth friendly centres at health facilities, eliminating costs associated with the services and increasing the availability of long lasting injectables.
- Provide post-violence care, including counselling and PEP to address the link between sexual violence and HIV risk

2. Increase Access to SRHR services

- Offer SRHR services for free at convenient locations to eliminate transportation barriers.
- Implement educational programs to raise awareness and utilisation of these services

3. Training of Healthcare workers

- Provide ongoing training for healthcare providers to reduce stigma and discrimination and support young women effectively against HIV transmission.

Recommendations for Future Research

- Future research should focus on the local factors contributing to the vulnerability of young women to HIV as there is diversity of the epidemic within and between countries hence effective interventions need to be tailored to the local context.

REFERENCES

1. Kaufman MR, Cornish F, Zimmerman RS, Johnson BT. Health behavior change models for HIV prevention and AIDS care: practical recommendations for a multi-level approach. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2014;66
2. Ministry of Health and Child Care (MOHCC) Z. Zimbabwe Population-based HIV Impact Assessment 2020 (ZIMPHIA 2020): Final Report. Harare; 2020 December 2021.
3. Jani N, Mathur S, Kahabuka C, Makyao N, Pilgrim N. Relationship dynamics and anticipated stigma: Key considerations for PrEP use among Tanzanian adolescent girls and young women and male partners. *Plos One*. 2021;16(2)
4. Karim SSA, Baxter C. HIV incidence rates in adolescent girls and young women in sub-Saharan Africa. *The Lancet Global Health*. 2019;7(11)
5. Dellar RC, Dlamini S, Karim QA. Adolescent girls and young women: key populations for HIV epidemic control. *Journal of the International AIDS Society*. 2015;18:19408.
6. UNAIDS. A framework for understanding and addressing HIV-related inequalities. Geneva; 2022 June 2022.
7. Fund UNCs. Assessing the Vulnerability and Risks of Adolescent Girls and Young Women in Eastern and Southern Africa: A Review of the Tools in Use. Nairobi; 2021 June 2021.
8. Psaros C, Milford C, Smit JA, Greener L, Mosery N, Matthews LT, et al. HIV prevention among young women in South Africa: understanding multiple layers of risk. *Archives of Sexual Behavior*. 2018;47:1969-82.
9. Singh K, Sambisa W, Munyati S, Chandiwana B, Chingono A, Monash R, et al. Targeting HIV interventions for adolescent girls and young women in Southern Africa: use of the PLACE methodology in Hwange District, Zimbabwe. *AIDS and Behavior*. 2010;14:200-8.
10. Groves AK, Gebrekristos LT, Smith PD, Stoebenau K, Stoner MC, Ameyan W, et al. Adolescent mothers in eastern and southern Africa: an overlooked and uniquely vulnerable subpopulation in the fight against HIV. *Journal of Adolescent Health*. 2022;70(6):895-901.

11. HIV/AIDS (UNAIDS) JUNPo. Ending the AIDS epidemic for Adolescents with Adolescents 2016 [Available from: https://www.unaids.org/sites/default/files/media_asset/ending-AIDS-epidemic-adolescents_en.pdf].
12. HIV/AIDS JUNPo. Dangerous Inequalities: World AIDS Day Report 2022. Geneva 2022 [Available from: https://www.unaids.org/sites/default/files/media_asset/dangerous-inequalities_en.pdf].
13. HIV/AIDS JUNPo. Women and HIV: a spotlight on adolescent girls and young women. 2019.
14. Organization WH. The importance of sexual and reproductive health and rights to prevent HIV in adolescent girls and young women in eastern and southern Africa: evidence brief. World Health Organization; 2017.
15. Underwood CR, Schwandt HM. Assessing girls' HIV vulnerability: evidence from Botswana, Malawi and Mozambique. *Health Policy and Planning*. 2016;31(6):729-35.
16. Kharsany AB, Karim QA. HIV infection and AIDS in sub-Saharan Africa: current status, challenges and opportunities. *The Open AIDS Journal*. 2016;10:34.
17. Jewell BL, Mudimu E, Stover J, Ten Brink D, Phillips AN, Smith JA, et al. Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models. *The Lancet HIV*. 2020;7(9)
18. PLAN AS. Zimbabwe National HIV and AIDS Strategic Plan.
19. Halperin DT, Mugurungi O, Hallett TB, Muchini B, Campbell B, Magure T, et al. A surprising prevention success: why did the HIV epidemic decline in Zimbabwe? *PloS Medicine*. 2011;8(2)
20. Dunbar MS, Kang Dufour M-S, Lambdin B, Mudekunye-Mahaka I, Nhamo D, Padian NS. The SHAZ! project: results from a pilot randomized trial of a structural intervention to prevent HIV among adolescent women in Zimbabwe. *PloS One*. 2014;9(11)
21. UNICEF. Ending HIV/AIDS with Children, Adolescents and Young Women. 2023.
22. UNAIDS. Women and HIV: A spotlight on young women and girls. Geneva; 2019.
23. Butts SA, Parmley LE, Alcaide ML, Rodriguez VJ, Kayukwa A, Chitalu N, et al. Let us fight and support one another: adolescent girls and young women on contributors and solutions to HIV risk in Zambia. *International Journal of Women's Health*. 2017:727-37.
24. Birdthistle I, Tanton C, Tomita A, de Graaf K, Schaffnit SB, Tanser F, et al. Recent levels and trends in HIV incidence rates among adolescent girls and young women in

- ten high-prevalence African countries: a systematic review and meta-analysis. *The Lancet Global Health*. 2019;7(11)
25. Birdthistle I, Schaffnit SB, Kwaro D, Shahmanesh M, Ziraba A, Kabiru CW, et al. Evaluating the impact of the DREAMS partnership to reduce HIV incidence among adolescent girls and young women in four settings: a study protocol. *BMC Public Health*. 2018;18(1):1-15.
 26. Ridgeway K, Lenzi R, Packer C, González-Calvo L, Moon TD, Green AF, et al. ‘I married when I was 16... due to poverty, I had no other way’: multi-level factors influencing HIV-related sexual risk behaviours among adolescent girls in Zambézia, Mozambique. *Culture, Health & Sexuality*. 2021;23(3):414-30.
 27. Butts SA, Kayukwa A, Langlie J, Rodriguez VJ, Alcaide ML, Chitalu N, et al. HIV knowledge and risk among Zambian adolescent and younger adolescent girls: challenges and solutions. *Sex Education*. 2018;18(1):1-13.
 28. Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *The Lancet*. 2010;376(9734):41-8.
 29. Fund TG. The Global Fund Results Report 2023 [Available from: https://www.theglobalfund.org/media/13263/corporate_2023resultsreport_report_en.pdf].
 30. Agency ZNS. Zimbabwe Demographic Health Survey Final Report. Harare; 2015 October 2016.
 31. Duri K, Stray-Pedersen B, Muller F. HIV/AIDS: The Zimbabwean situation and trends. 2013.
 32. Chevo T, Bhatasara S. HIV and AIDS programmes in Zimbabwe: implications for the health system. *International Scholarly Research Notices*. 2012;2012.
 33. Wüthrich-Grossenbacher U, Midzi N, Mutsaka-Makuvaza MJ, Mutsinze A. Religious and traditional beliefs and practices as predictors of mental and physical health outcomes and the role of religious affiliation in health outcomes and risk taking. *BMC Public Health*. 2023;23(1):2170.
 34. Mhuru L. Gender justice, law and religion in Zimbabwe: An evaluation of the role of sacred texts. *HTS Theologies Studies/Theological Studies (ajol info)*. 2023.
 35. Fund TG. Towards ending HIV/AIDS as a public health threat by 2030. 2022.
 36. Machingura F, Mhlanga G, Mtwazi C, Mpfu A. LEAVING NO ONE BEHIND HIV/AIDS: Women and Girls in Zimbabwe.

37. Schaefer R, Gregson S, Eaton JW, Mugurungi O, Rhead R, Takaruzza A, et al. Age-disparate relationships and HIV incidence in adolescent girls and young women: evidence from Zimbabwe. *AIDS (London, England)*. 2017;31(10):1461.
38. Fund G. Technical Brief HIV Programming for Adolescent Girls and Young Women Allocation Period 2023-2025: GLOBAL FUND; [updated 23-08-23. Available from: https://www.theglobalfund.org/media/4576/core_adolescentgirlsandyoungwomen_technicalbrief_en.pdf].
39. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372.
40. Baral S, Logie CH, Grosso A, Wirtz AL, Beyrer C. Modified social ecological model: a tool to guide the assessment of the risks and risk contexts of HIV epidemics. *BMC Public Health*. 2013;13(1):1-8.
41. Mashego TB. Theories and models for the development and implementation of a health promotion intervention: a review. *Journal of Human Ecology*. 2012;39(1):27-35.
42. Long C. Understanding HIV/AIDS: Key Risk Factors and the Role of Pre-exposure Prophylaxis (PrEP) in Adolescent Girls and Young Women. 2023.
43. Kurth AE, Lally MA, Choko AT, Inwani IW, Fortenberry JD. HIV testing and linkage to services for youth. *JIAS*. 2015;18(2S1).
44. Ncube B, Ansong J, Daniels K, Malapane E, Manu E, Asare BY, et al. Proximity to HIV testing and HIV knowledge in women of reproductive age: evidence from 16 sub-Saharan African countries. *BMC Public Health*. 2023;23(1):172.
45. Chimbindi N, Birdthistle I, Shahmanesh M, Osindo J, Mushati P, Ondeng'e K, et al. Translating DREAMS into practice: early lessons from implementation in six settings. *PLOS ONE*. 2018;13(12)
46. Simona S, Chapotera G, Katundulu K, Denson S, Penechoud G, Kim J, et al. Evaluation of the impact of PrEP training on health providers' attitudes and perceptions in Lilongwe, Malawi. *African Journal of Primary Health Care & Family Medicine*. 2022;14(1):1-8.
47. Napierala S, Bairros F, Fish M, Lebelonyane R, Thamage B, Shapiro A, et al. What impacts the decision to initiate PrEP? Perspectives of adolescent girls and young women in Botswana. *Journal of the International AIDS Society*. 2021;24(7).
48. Dent J. Prevention Access Initiative's U=U: an analysis of global and national HIV/AIDS policy trends. 2021.

49. Mavhu W, Rowley E, Thior I, Kruse-Levy N, Mugurungi O, Ncube G, et al. Sexual behavior experiences and characteristics of male-female partnerships among HIV positive adolescent girls and young women: Qualitative findings from Zimbabwe. *PloS One*. 2018;13(3)
50. Muchiri E, Odimegwu C, De Wet N. HIV risk perception and consistency in condom use among adolescents and young adults in urban Cape Town, South Africa: a cumulative risk analysis. *Southern African Journal of Infectious Diseases*. 2017;32(3):105-10.
51. Ferede TA, Muluneh AG, Wagnaw A, Walle AD. Prevalence and associated factors of early sexual initiation among youth female in sub-Saharan Africa: a multilevel analysis of recent demographic and health surveys. *BMC Women's Health*. 2023;23(1):147
52. Moyo S, Matanda N. The Chinamwari initiation rite in Zimbabwe: Opportunity or threat to the girl child? *American Research Journal of Humanities & Social Science*. 2020;3(11):38-43.
53. Chemhaka GB, Simelane MS. Timing of sexual debut and associated sociodemographic and HIV risk factors among young people in Eswatini. *PloS One*. 2024;19(6)
54. He J, Flaxman A, Imai-Eaton JW, Aravkin A, Zheng P, Sorensen R, et al. Association Between Early Sexual Debut and New HIV Infections Among Adolescents and Young Adults in 11 African Countries. *AIDS and Behavior*. 2024:1-10.
55. Stöckl H, Kalra N, Jacobi J, Watts C. Is early sexual debut a risk factor for HIV infection among women in sub-Saharan Africa? A systematic review. *American Journal of Reproductive Immunology*. 2013;69:27-40.
56. Becker ML, Bhattacharjee P, Blanchard JF, Cheuk E, Isac S, Musyoki HK, et al. Vulnerabilities at first sex and their association with lifetime gender-based violence and HIV prevalence among adolescent girls and young women engaged in sex work, transactional sex, and casual sex in Kenya. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2018;79(3):296-304.
57. Crankshaw TL, Chareka S, Zambezi P, Poku NK. Age matters: determinants of sexual and reproductive health vulnerabilities amongst young women who sell sex (16–24 years) in Zimbabwe. *Social Science & Medicine*. 2021;270:113597.

58. Moyo S, Zvoushe A. Factors underlying early sexual initiation among adolescents: A Case Study of Mbare District, Harare, Zimbabwe. *International Multidisciplinary Research Journal*. 2013;2(12).
59. Yaya S, Bishwajit G. Age at first sexual intercourse and multiple sexual partnerships among women in Nigeria: a cross-sectional analysis. *Front Med (Lausanne)*. 2018;5:171.
60. Maraire T, Mariamdarán SDC. Drug and substance abuse problem by the Zimbabwean youth: A psychological perspective. *Practitioner Research*. 2020;2:41-59.
61. Pufall E, Eaton J, Robertson L, Mushati P, Nyamukapa C, Gregson S. Education, substance use, and HIV risk among orphaned adolescents in Eastern Zimbabwe. *Vulnerable Children and Youth Studies*. 2017;12(4):360-74.
62. Mabaso M, Sokhela Z, Mohlabane N, Chibi B, Zuma K, Simbayi L. Determinants of HIV infection among adolescent girls and young women aged 15–24 years in South Africa: a 2012 population-based national household survey. *BMC Public Health*. 2018;18(1):1-7.
63. Hlahla K, Azizi SC, Simms V, Chikwari CD, Dauya E, Bandason T, et al. Prevalence of substance and hazardous alcohol use and their association with risky sexual behaviour among youth: findings from a population-based survey in Zimbabwe. *BMJ Open*. 2024;14(6)
64. Chialepeh WN, Susuman AS. Risk Factors of Inconsistent Condom Use among Sexually Active Youths: Implications for Human Immunodeficiency Virus and Sexual Risk Behaviours in Malawi. *Journal of Asian and African Studies*. 2017;52(4):484-96.
65. UNAIDS. *The Path That Ends AIDS: UNAIDS GLOBAL AIDS UPDATE 2023*.
66. Chabata ST, Hensen B, Chiyaka T, Mushati P, Busza J, Floyd S, et al. Condom use among young women who sell sex in Zimbabwe: a prevention cascade analysis to identify gaps in HIV prevention programming. *Journal of the International AIDS Society*. 2020;23
67. Chabata ST, Hensen B, Chiyaka T, Mushati P, Mtetwa S, Hanisch D, et al. Changes over time in HIV prevalence and sexual behaviour among young female sex-workers in 14 sites in Zimbabwe, 2013–2016. *AIDS and Behavior*. 2019;23:1494-507.

68. Wamoyi J, Stobeanau K, Bobrova N, Abramsky T, Watts C. Transactional sex and risk for HIV infection in sub-Saharan Africa: a systematic review and meta-analysis. *Journal of the International AIDS Society*. 2016;19(1):20992.
69. Choudhry V, Ambresin A-E, Nyakato VN, Agardh A. Transactional sex and HIV risks—evidence from a cross-sectional national survey among young people in Uganda. *Global Health Action*. 2015;8(1):27249.
70. Elmes J, Skovdal M, Nhongo K, Ward H, Campbell C, Hallett TB, et al. A reconfiguration of the sex trade: how social and structural changes in eastern Zimbabwe left women involved in sex work and transactional sex more vulnerable. *PloS One*. 2017;12(2)
71. Brown K, Williams DB, Kinchen S, Saito S, Radin E, Patel H, et al. Status of HIV epidemic control among adolescent girls and young women aged 15–24 years—seven African countries, 2015–2017. *Morbidity and Mortality Weekly Report*. 2018;67(1):29.
72. Ramjee G, Daniels B. Women and HIV in sub-Saharan Africa. *AIDS Research and Therapy*. 2013;10(1):1-9.
73. Ziraba A, Orindi B, Muuo S, Floyd S, Birdthistle IJ, Mumah J, et al. Understanding HIV risks among adolescent girls and young women in informal settlements of Nairobi, Kenya: Lessons for DREAMS. *PloS One*. 2018;13(5)
74. Schaefer R, Gregson S, Eaton JW, Mugurungi O, Rhead R, Takaruza A, et al. Age-disparate relationships and HIV incidence in adolescent girls and young women: evidence from Zimbabwe. *AIDS*. 2017;31(10):1461-70.
75. Bajunirwe F, Semakula D, Izudi J. Risk of HIV infection among adolescent girls and young women in age-disparate relationships in sub-Saharan Africa. *AIDS*. 2020;34(10):1539-48.
76. Harrison A, Colvin CJ, Kuo C, Swartz A, Lurie M. Sustained high HIV incidence in young women in Southern Africa: social, behavioral, and structural factors and emerging intervention approaches. *Current HIV/AIDS Reports*. 2015;12:207-15.
77. Lewis L, Kharsany AB, Humphries H, Maughan-Brown B, Beckett S, Govender K, et al. HIV incidence and associated risk factors in adolescent girls and young women in South Africa: a population-based cohort study. *PloS One*. 2022;17(12)

78. Murewanhema G, Musuka G, Moyo P, Moyo E, Dzinamarira T. HIV and adolescent girls and young women in sub-Saharan Africa: A call for expedited action to reduce new infections. *IJID Regions*. 2022;5:30-2.
79. Ramjee G, Daniels B. Women and HIV in sub-Saharan Africa. *AIDS Research and Therapy*. 2013;10:1-9.
80. Health Mo, Zimbabwe CC. Young Adult Survey of Zimbabwe: A violence against children study, 2017. Elizabeth Glaser Pediatric AIDS Foundation Harare, Zimbabwe; 2019.
81. Henderson L, Zerai A, Morrow RL. Intimate partner violence and HIV status among ever-married and cohabiting Zimbabwean women: an examination of partners' traits. *African Journal of Reproductive Health*. 2017;21(4):45-54
82. Mapingure M, Dzinamarira T, Mukandavire Z. Prevalence of intimate partner violence and its association with HIV among women in Zimbabwe: evidence from a recent nationally representative cross-sectional survey. *BMJ Open*. 2023;13(4)
83. Jewkes R, Dunkle K, Nduna M, Jama Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *The Lancet*. 2010;376:41-8.
84. Shamu S, Abrahams N, Zarowsky C, Shefer T, Temmerman M. Intimate partner violence during pregnancy in Zimbabwe: a cross-sectional study of prevalence, predictors and associations with HIV. *Tropical Medicine & International Health*. 2013;18:696-711.
85. Maman S, Campbell J, Sweat MD, Gielen AC. The intersections of HIV and violence: directions for future research and interventions. *Social Science & Medicine*. 2000;50:459-78.
86. ZIMSTAT I. Zimbabwe Population-Based HIV Impact Assessment (ZIMPHIA) 2020 [Internet]. ZimStat; 2021 [cited 2022 Sep 6]. Available from: <http://phia.icap.columbia.edu>.
87. ZIMSTAT I. Zimbabwe Demographic and Health Survey 2015: Final Report [Internet]. 2016. Available from: <http://dhsprogram.com/pubs/pdf/FR322/FR322.pdf>.
88. Pillay D, Manderson L, Barker R. Violence against adolescent girls in the Global South: a systematic review. *Trauma, Violence, & Abuse*. 2021;22:18-32.
89. Center for Reproductive Rights. Ending forced and early marriages in Zimbabwe [Internet]. 2023 [cited 2023 Apr 3]. Available from: https://reproductiverights.org/wp-content/uploads/2023/01/CRR-Zimbabwe-Briefer_2023.pdf.

90. ZIMSTAT I. Zimbabwe Demographic and Health Survey 2021: Final Report [Internet]. 2022. Available from: <http://dhsprogram.com/pubs/pdf/FR322/FR322.pdf>.
91. ZIMSTAT I. Zimbabwe Demographic and Health Survey 2021 [Internet]. 2022. Available from: <http://dhsprogram.com/pubs/pdf/FR322/FR322.pdf>.
92. Zimbabwe. Ministry of Health and Child Care. National Adolescent Sexual and Reproductive Health Strategy, 2016-2020 [Internet]. 2016 [cited 2022 Aug 10]. Available from: <http://www.zim-education.org>.
93. ZIMSTAT I. Zimbabwe Demographic and Health Survey 2015 [Internet]. 2016. Available from: <http://dhsprogram.com/pubs/pdf/FR322/FR322.pdf>.
94. Muheriwa Matemba SR, Cianelli R, De Santis JP, Rodriguez NV, Kaponda CC, McMahon JM, et al. Socio-Ecological Associations of the Development of Sexual Behavior in Young Adolescent Girls in the Rural Southern Region of Malawi. *J Early Adolesc.* 2024;44(5):624-66.
95. Agaba PA, Makai R, Bankat CT, Chebu PR, Apena T, Iyaji-Paul O, et al. Sexual behavior and risk factors for HIV infection among young people aged 15-24 years in North-Central Nigeria. *J Med Trop.* 2016;18(2):60-7.
96. Petroni S, Yates R, Siddiqi M, Luo C, Finnie A, Walker D, et al. Understanding the relationships between HIV and child marriage: conclusions from an expert consultation. *J Adolesc Health.* 2019;64(6):694-6.
97. Raj A, Boehmer U. Girl child marriage and its association with national rates of HIV, maternal health, and infant mortality across 97 countries. *Violence Against Women.* 2013;19(4):536-51.
98. Arije OO, Udoh EE, Ijadunola KT, Afolabi OT, Aransiola JO, Omoregie G, et al. Vulnerability to HIV infection among adolescent girls and young women in Nigeria. *Vulnerable Child Youth Stud.* 2021;16(3):267-78.
99. Shaw SA, El-Bassel N. The influence of religion on sexual HIV risk. *AIDS Behav.* 2014;18:1569-94.
100. Hallfors DD, Iritani BJ, Zhang L, Hartman S, Luseno WK, Mpofo E, et al. 'I thought if I marry the prophet I would not die': The significance of religious affiliation

- on marriage, HIV testing, and reproductive health practices among young married women in Zimbabwe. *SAHARA-J: J Soc Aspects HIV/AIDS*. 2016;13(1):178-87.
101. Nenge RT. A hermeneutical challenge in the fight against HIV and AIDS in the Johane Marange Apostolic Church. *Exchange*. 2013;42(3):252-66.
 102. Kassahun EA, Gelagay AA, Muche AA, Dessie AA, Kassie BA. Factors associated with early sexual initiation among preparatory and high school youths in Woldia town, northeast Ethiopia: a cross-sectional study. *BMC Public Health*. 2019;19:1-8.
 103. Agbaria Q, Mahamid F, Ziya Berte D. Social support, self-control, religiousness and engagement in high risk-behaviors among adolescents. *Int J Indian Psychol*. 2017;4(4):13-33.
 104. Chandra-Mouli V, Svanemyr J, Amin A, Fogstad H, Say L, Girard F, et al. Twenty years after International Conference on Population and Development: where are we with adolescent sexual and reproductive health and rights? *J Adolesc Health*. 2015;56(1).
 105. Skovdal M, Magoge-Mandizvidza P, Dzamatira F, Maswera R, Nyamukapa C, Thomas R, et al. Improving access to pre-exposure prophylaxis for adolescent girls and young women: recommendations from healthcare providers in eastern Zimbabwe. *BMC Infect Dis*. 2022;22(1):399.
 106. Skovdal M, Magoge-Mandizvidza P, Maswera R, Moyo M, Nyamukapa C, Thomas R, et al. Stigma and confidentiality indiscretions: intersecting obstacles to the delivery of pre-exposure prophylaxis to adolescent girls and young women in East Zimbabwe. *Remaking HIV prevention in the 21st century: the promise of TasP, U= U and PrEP*. 2021:237-48.
 107. Kurebwa J. Knowledge and perceptions of adolescent sexual and reproductive health issues among rural adolescence in Gutu rural district of Zimbabwe. *Int J Adv Res Publ*. 2017;1(1):15-9.
 108. Makunika N, Manyange L. Determinants of HIV Prevention amongst Adolescents in Zimbabwe: The Case of Dzivarasekwa, Harare. *Int J Sex Reprod Health Care*. 2020;3(1):051-60.

109. Ninsiima LR, Chiumia IK, Ndejjo R. Factors influencing access to and utilisation of youth-friendly sexual and reproductive health services in sub-Saharan Africa: a systematic review. *Reprod Health*. 2021;18:1-17.
110. Lanham M, Ridgeway K, Mireku M, Nhamo D, Pillay D, Murire M, et al. Health care providers' attitudes toward and experiences delivering oral PrEP to adolescent girls and young women in Kenya, South Africa, and Zimbabwe. *BMC Health Serv Res*. 2021;21:1-12
111. Fleischman J, Peck K. Addressing HIV risk in adolescent girls and young women: JSTOR; 2015.
112. Muwonwa N. 'Subverting Controls': Historicising the Multi-dimensions of Female Youth Sexuality in Post-colonial Zimbabwe. *Fending for Ourselves: Youth in Zimbabwe, 1980-2020*. 2021:158.
113. Barr-DiChiara M, Tembo M, Harrison L, Quinn C, Ameyan W, Sabin K, et al. Adolescents and age of consent to HIV testing: an updated review of national policies in sub-Saharan Africa. *BMJ Open*. 2021;11(9)
114. Mollel GJ, Katende A, Shahmanesh M. LEGAL AGE OF CONSENT FOR HIV TESTING AMONG ADOLESCENTS IN SUB SAHARAN AFRICA, A SYSTEMATIC REVIEW. *medRxiv*. 2022:2022.05. 17.22275222.
115. Mwambene L. Recent legal responses to child marriage in Southern Africa: The case of Zimbabwe, South Africa and Malawi. *Afr Hum Rights Law J*. 2018;18(2):527-50.
116. Zhou S, Landa N, Zhou IN. Communicating reproductive rights to marginalised girls and teenage mothers at risk of HIV infection in rural Zimbabwe. *Alternation J*. 2016;23(2):309-23.
117. McKinnon B, Vandermorris A. National age-of-consent laws and adolescent HIV testing in sub-Saharan Africa: a propensity-score matched study. *Bull World Health Organ*. 2019;97(1):42.
118. Chikava T, Eghtessadi R, Chingombe I, Murewanhema G, Cheza A, Dzinamarira T, et al. Zimbabwean law and its impact on HIV programmes for key populations. *Front Public Health*. 2023;11:1272775.

119. Busza J, Mtetwa S, Mapfumo R, Hanisch D, Wong-Gruenwald R, Cowan F. Underage and underserved: reaching young women who sell sex in Zimbabwe. *AIDS Care*. 2016;28(sup2):14-20.
120. Chiyaka T, Mushati P, Hensen B, Chabata S, Hargreaves JR, Floyd S, et al. Reaching young women who sell sex: methods and results of social mapping to describe and identify young women for DREAMS impact evaluation in Zimbabwe. *PLoS One*. 2018;13(3)
121. Kamire V, Magut F, Khagayi S, Kambona C, Muttai H, Nganga L, et al. HIV risk factors and risk perception among adolescent girls and young women: results from a population-based survey in western Kenya, 2018. *J Acquir Immune Defic Syndr*. 2022;91(1):17-25.
122. Chapman J, do Nascimento N, Mandal M. Role of male sex partners in HIV risk of adolescent girls and young women in Mozambique. *Glob Health Sci Pract*. 2019;7(3):435-46.
123. International. ZNSAaI. Zimbabwe Demographic and Health Survey 2015: Final Report Rockville, Maryland, USA: Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International.; 2016 [Available from: <https://dhsprogram.com/pubs/pdf/FR322/FR322.pdf>.
124. (ZIMSTAT) ZNSA. A story of Inequality. 2014.
125. Muperere SB, Makochehanwa A, Moyo S, Mhloyi M. Socioeconomic Determinants of Use of HIV Testing Services among Gender Based Violence (GBV) Survivors in Matabeleland South, Zimbabwe. *Tanzan Econ Rev*. 2022;11(2).
126. Handa S, Halpern CT, Pettifor A, Thirumurthy H. The government of Kenya's cash transfer program reduces the risk of sexual debut among young people age 15-25. *PLoS One*. 2014;9(1).
127. Decker MR, Peitzmeier S, Olumide A, Acharya R, Ojengbede O, Covarrubias L, et al. Prevalence and health impact of intimate partner violence and non-partner sexual violence among female adolescents aged 15–19 years in vulnerable urban environments: a multi-country study. *J Adolesc Health*. 2014;55(6).
128. Mabaso M, Mlangeni L, Makola L, Oladimeji O, Naidoo I, Naidoo Y, et al. Factors associated with age-disparate sexual partnerships among males and females in

- South Africa: a multinomial analysis of the 2012 national population-based household survey data. *Emerg Themes Epidemiol.* 2021;18:1-13.
129. Harling G, Newell M-L, Tanser F, Kawachi I, Subramanian SV, Bärnighausen T. Do age-disparate relationships drive HIV incidence in young women? Evidence from a population cohort in rural KwaZulu-Natal, South Africa. *J Acquir Immune Defic Syndr.* 2014;66(4):443-51.
 130. (UNFPA) UNFfPA. *Harmonizing the Legal Environment for Adolescent Sexual and Reproductive Health and Rights.* 2017.
 131. UNAIDS. *National commitments and policy instrument 2017–2022.* Geneva: Joint United Nations Programme on HIV/AIDS Geneva; 2023.
 132. Adan FI, Githae M, Githae C. Factors influencing access to reproductive health information services among young aged 15-24 in Garissa Municipality, Kenya. *Int J Contemp Res Rev.* 2018;9(08):20537-74.
 133. Agüero JM, Bharadwaj P. Do the More Educated Know More about Health? Evidence from Schooling and HIV Knowledge in Zimbabwe. *Econ Dev Cult Change.* 2014;62(3):489-517.
 134. Chanda-Kapata P, Klinkenberg E, Maddox N, Ngosa W, Kapata N. The prevalence and socio-economic determinants of HIV among teenagers aged 15–18 years who were participating in a mobile testing population based survey in 2013–2014 in Zambia. *BMC Public Health.* 2016;16:1-7.

1. Kaufman MR, Cornish F, Zimmerman RS, Johnson BT. *Health behavior change models for HIV prevention and AIDS care: practical recommendations for a multi-level approach*. JAIDS Journal of Acquired Immune Deficiency Syndromes. 2014;66:S250-S8.
2. Ministry of Health and Child Care (MOHCC) Z. *Zimbabwe Population-based HIV Impact Assessment 2020 (ZIMPHIA 2020): Final Report*. Harare; 2020 December 2021.
3. Jani N, Mathur S, Kahabuka C, Makyao N, Pilgrim N. *Relationship dynamics and anticipated stigma: Key considerations for PrEP use among Tanzanian adolescent girls and young women and male partners*. Plos one. 2021;16(2):e0246717.
4. Karim SSA, Baxter C. *HIV incidence rates in adolescent girls and young women in sub-Saharan Africa*. The Lancet Global Health. 2019;7(11):e1470-e1.
5. Dellar RC, Dlamini S, Karim QA. *Adolescent girls and young women: key populations for HIV epidemic control*. Journal of the International AIDS Society. 2015;18:19408.
6. UNAIDS. *A framework for understanding and addressing HIV-related inequalities*. GENEVA; 2022 JUNE /2022.
7. Fund UNCs. *Assessing the Vulnerability and Risks of Adolescent Girls and Young Women in Eastern and Southern Africa: A Review of the Tools in Use*. Nairobi; 2021 06/2021.
8. Psaros C, Milford C, Smit JA, Greener L, Mosery N, Matthews LT, et al. *HIV prevention among young women in South Africa: understanding multiple layers of risk*. Archives of sexual behavior. 2018;47:1969-82.
9. Singh K, Sambisa W, Munyati S, Chandiwana B, Chingono A, Monash R, et al. *Targeting HIV interventions for adolescent girls and young women in Southern Africa: use of the PLACE methodology in Hwange District, Zimbabwe*. AIDS and Behavior. 2010;14:200-8.
10. Groves AK, Gebrekristos LT, Smith PD, Stoebenau K, Stoner MC, Ameyan W, et al. *Adolescent mothers in eastern and southern Africa: an overlooked and uniquely vulnerable subpopulation in the fight against HIV*. Journal of Adolescent Health. 2022;70(6):895-901.
11. HIV/AIDS(UNAIDS) JUNPo. *Ending the AIDS epidemic for Adolescents with Adolescents* 2016 [Available from: https://www.unaids.org/sites/default/files/media_asset/ending-AIDS-epidemic-adolescents_en.pdf
12. HIV/AIDS JUNPo. *Dangerous Inequalities: World AIDS Day Report 2022* Geneva2022 [Available from: https://www.unaids.org/sites/default/files/media_asset/dangerous-inequalities_en.pdf.

13. HIV/AIDS JUNPo. *Women and HIV: a spotlight on adolescent girls and young women*. 2019.
14. Organization WH. *The importance of sexual and reproductive health and rights to prevent HIV in adolescent girls and young women in eastern and southern Africa: evidence brief*. World Health Organization; 2017.
15. Underwood CR, Schwandt HM. *Assessing girls' HIV vulnerability: evidence from Botswana, Malawi and Mozambique*. Health policy and planning. 2016;31(6):729-35.
16. Kharsany AB, Karim QA. *HIV infection and AIDS in sub-Saharan Africa: current status, challenges and opportunities*. The open AIDS journal. 2016;10:34.
17. Jewell BL, Mudimu E, Stover J, Ten Brink D, Phillips AN, Smith JA, et al. *Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models*. The lancet HIV. 2020;7(9):e629-e40.
18. PLAN AS. *ZIMBABWE NATIONAL HIV AND AIDS STRATEGIC PLAN*.
19. Halperin DT, Mugurungi O, Hallett TB, Muchini B, Campbell B, Magure T, et al. *A surprising prevention success: why did the HIV epidemic decline in Zimbabwe?* PLoS medicine. 2011;8(2):e1000414.
20. Dunbar MS, Kang Dufour M-S, Lambdin B, Mudekunya-Mahaka I, Nhamo D, Padian NS. *The SHAZ! project: results from a pilot randomized trial of a structural intervention to prevent HIV among adolescent women in Zimbabwe*. PloS one. 2014;9(11):e113621.
21. UNICEF. *Ending HIV/AIDS with Children, Adolescents and Young Women*. 2023.
22. UNAIDS. *Women and HIV: A spotlight on young women and Girls* Geneva; 2019.
23. Butts SA, Parmley LE, Alcaide ML, Rodriguez VJ, Kayukwa A, Chitalu N, et al. *Let us fight and support one another: adolescent girls and young women on contributors and solutions to HIV risk in Zambia*. International Journal of Women's Health. 2017:727-37.
24. Birdthistle I, Tanton C, Tomita A, de Graaf K, Schaffnit SB, Tanser F, et al. *Recent levels and trends in HIV incidence rates among adolescent girls and young women in ten high-prevalence African countries: a systematic review and meta-analysis*. The Lancet Global Health. 2019;7(11):e1521-e40.
25. Birdthistle I, Schaffnit SB, Kwaro D, Shahmanesh M, Ziraba A, Kabiru CW, et al. *Evaluating the impact of the DREAMS partnership to reduce HIV incidence among adolescent girls and young women in four settings: a study protocol*. BMC Public Health. 2018;18(1):1-15.
26. Ridgeway K, Lenzi R, Packer C, González-Calvo L, Moon TD, Green AF, et al. *'I married when I was 16... due to poverty, I had no other way': multi-level factors influencing HIV-related sexual risk behaviours among adolescent girls in Zambézia, Mozambique*. Culture, health & sexuality. 2021;23(3):414-30.
27. Butts SA, Kayukwa A, Langlie J, Rodriguez VJ, Alcaide ML, Chitalu N, et al. *HIV knowledge and risk among Zambian adolescent and younger adolescent girls: challenges and solutions*. Sex Education. 2018;18(1):1-13.
28. Jewkes RK, Dunkle K, Nduna M, Shai N. *Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study*. Lancet (London, England). 2010;376(9734):41-8.
29. Fund TG. *The Global Fund Results Report 2023* [Available from: https://www.theglobalfund.org/media/13263/corporate_2023resultsreport_report_en.pdf].
30. Agency ZNS. *Zimbabwe Demographic Health Survey Final Report*. Harare; 2015 October 2016.
31. Duri K, Stray-Pedersen B, Muller F. *HIV/AIDS: The Zimbabwean situation and trends*. 2013.
32. Chevo T, Bhatasara S. *HIV and AIDS programmes in Zimbabwe: implications for the health system*. International Scholarly Research Notices. 2012;2012.

33. Wüthrich-Grossenbacher U, Midzi N, Mutsaka-Makuvaza MJ, Mutsinze A. *Religious and traditional beliefs and practices as predictors of mental and physical health outcomes and the role of religious affiliation in health outcomes and risk taking*. BMC public health. 2023;23(1):2170.
34. Mhuru L. *Gender justice, law and religion in Zimbabwe: An evaluation of the role of sacred texts* | HTS Teologiese Studies. Theological Studies (ajol info). 2023.
35. Fund TG. *Towards ending HIV/AIDS as a public health threat by 2030*. 2022.
36. Machingura F, Mhlanga G, Mtwazi C, Mpofu A. *LEAVING NO ONE BEHIND HIV/AIDS: Women and Girls in Zimbabwe*.
37. Schaefer R, Gregson S, Eaton JW, Mugurungi O, Rhead R, Takaruzza A, et al. *Age-disparate relationships and HIV incidence in adolescent girls and young women: evidence from Zimbabwe*. AIDS (London, England). 2017;31(10):1461.
38. Fund G. *Technical Brief HIV Programming for Adolescent Girls and Young Women Allocation Period 2023-2025*: GLOBAL FUND; [updated 23-08-23. Available from: https://www.theglobalfund.org/media/4576/core_adolescentgirlsandyoungwomen_technicalbrief_en.pdf.
39. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. *The PRISMA 2020 statement: an updated guideline for reporting systematic reviews*. bmj. 2021;372.
40. Baral S, Logie CH, Grosso A, Wirtz AL, Beyrer C. *Modified social ecological model: a tool to guide the assessment of the risks and risk contexts of HIV epidemics*. BMC public health. 2013;13(1):1-8.
41. UNICEF. *Growing up with Shuga: Engaging Zimbabwe's youth through edutainment*. 2023.
42. Mandiwa C, Namondwe B, Munthali M. *Prevalence and correlates of comprehensive HIV/AIDS knowledge among adolescent girls and young women aged 15–24 years in Malawi: evidence from the 2015–16 Malawi demographic and health survey*. BMC Public Health. 2021;21:1-9.
43. Pachena A, Musekiwa A. *Trends in HIV Testing and Associated Factors among Adolescent Girls and Young Women in Zimbabwe: Cross-Sectional Analysis of Demographic and Health Survey Data from 2005 to 2015*. International Journal of Environmental Research and Public Health. 2022;19(9):5165.
44. Frimpong JB, Budu E, Adu C, Mohammed A, Tetteh JK, Seidu A-A, et al. *Comprehensive HIV/AIDS knowledge and safer sex negotiation among adolescent girls and young women in sub-Saharan Africa*. Journal of Biosocial Science. 2022;54(6):991-1003.
45. Olasode OA. *Sexual behaviour in adolescents and young people attending a sexually transmitted disease clinic, Ile Ife, Nigeria*. Indian journal of sexually Transmitted Diseases and AIDS. 2007;28(2):83-6.
46. Cederbaum JA, Gilreath TD, Barman-Adhikari A. *Perceived risk and condom use among adolescents in sub-Saharan Africa: a latent class analysis*. African journal of reproductive health. 2014;18(4):26-33.
47. Kamire V, Magut F, Khagayi S, Kambona C, Muttai H, Nganga L, et al. *HIV risk factors and risk perception among adolescent girls and young women: results from a population-based survey in Western Kenya, 2018*. JAIDS Journal of Acquired Immune Deficiency Syndromes. 2022;91(1):17-25.
48. Kanda L, Mash R. *Reasons for inconsistent condom use by young adults in Mahalapye, Botswana*. African Journal of Primary Health Care and Family Medicine. 2018;10(1):1-7.
49. Mavhu W, Rowley E, Thior I, Kruse-Levy N, Mugurungi O, Ncube G, et al. *Sexual behavior experiences and characteristics of male-female partnerships among HIV positive*

- adolescent girls and young women: Qualitative findings from Zimbabwe.* PloS one. 2018;13(3):e0194732.
50. Muchiri E, Odimegwu C, De Wet N. *HIV risk perception and consistency in condom use among adolescents and young adults in urban Cape Town, South Africa: a cumulative risk analysis.* Southern African Journal of Infectious Diseases. 2017;32(3):105-10.
 51. Ferede TA, Muluneh AG, Wagnew A, Walle AD. *Prevalence and associated factors of early sexual initiation among youth female in sub-Saharan Africa: a multilevel analysis of recent demographic and health surveys.* BMC Women's Health. 2023;23(1):147.
 52. Moyo S, Matanda N. *The Chinamwari initiation rite in Zimbabwe: Opportunity or threat to the girl child?* American Research Journal of Humanities & Social Science. 2020;3(11):38-43.
 53. Chemhaka GB, Simelane MS. *Timing of sexual debut and associated sociodemographic and HIV risk factors among young people in Eswatini.* Plos one. 2024;19(6):e0303942.
 54. He J, Flaxman A, Imai-Eaton JW, Aravkin A, Zheng P, Sorensen R, et al. *Association Between Early Sexual Debut and New HIV Infections Among Adolescents and Young Adults in 11 African Countries.* AIDS and Behavior. 2024:1-10.
 55. Stöckl H, Kalra N, Jacobi J, Watts C. *Is early sexual debut a risk factor for HIV infection among women in sub-saharan Africa? A systematic review.* American Journal of Reproductive Immunology. 2013;69:27-40.
 56. Becker ML, Bhattacharjee P, Blanchard JF, Cheuk E, Isac S, Musyoki HK, et al. *Vulnerabilities at first sex and their association with lifetime gender-based violence and HIV prevalence among adolescent girls and young women engaged in sex work, transactional sex, and casual sex in Kenya.* JAIDS Journal of Acquired Immune Deficiency Syndromes. 2018;79(3):296-304.
 57. Crankshaw TL, Chareka S, Zambezi P, Poku NK. *Age matters: determinants of sexual and reproductive health vulnerabilities amongst young women who sell sex (16–24 years) in Zimbabwe.* Social Science & Medicine. 2021;270:113597.
 58. Moyo S, Zvoushe A. *Factors underlying early sexual initiation among adolescents: A Case Study of Mbare District, Harare, Zimbabwe.* International Multidisciplinary Research Journal. 2013;2(12).
 59. Yaya S, Bishwajit G. *Age at first sexual intercourse and multiple sexual partnerships among women in Nigeria: a cross-sectional analysis.* Front Med (Lausanne). 2018; 5: 171. 2018.
 60. Maraire T, Mariamdarán SDC. *Drug and substance abuse problem by the Zimbabwean youth: A psychological perspective.* Practitioner Research. 2020;2:41-59.
 61. Pufall E, Eaton J, Robertson L, Mushati P, Nyamukapa C, Gregson S. *Education, substance use, and HIV risk among orphaned adolescents in Eastern Zimbabwe.* Vulnerable children and youth studies. 2017;12(4):360-74.
 62. Mabaso M, Sokhela Z, Mohlabane N, Chibi B, Zuma K, Simbayi L. *Determinants of HIV infection among adolescent girls and young women aged 15–24 years in South Africa: a 2012 population-based national household survey.* BMC public health. 2018;18(1):1-7.
 63. Hlahla K, Azizi SC, Simms V, Chikwari CD, Dauya E, Bandason T, et al. *Prevalence of substance and hazardous alcohol use and their association with risky sexual behaviour among youth: findings from a population-based survey in Zimbabwe.* BMJ open. 2024;14(6):e080993.
 64. Chialeph WN, Susuman AS. *Risk Factors of Inconsistent Condom Use among Sexually Active Youths: Implications for Human Immunodeficiency Virus and Sexual Risk Behaviours in Malawi.* Journal of Asian and African Studies. 2017;52(4):484-96.
 65. UNAIDS. *The Path That Ends AIDS: UNAIDS GLOBAL AIDS UPDATE 2023.*

66. Chabata ST, Hensen B, Chiyaka T, Mushati P, Busza J, Floyd S, et al. *Condom use among young women who sell sex in Zimbabwe: a prevention cascade analysis to identify gaps in HIV prevention programming*. Journal of the International AIDS Society. 2020;23:e25512.
67. Chabata ST, Hensen B, Chiyaka T, Mushati P, Mtetwa S, Hanisch D, et al. *Changes over time in HIV prevalence and sexual behaviour among young female sex-workers in 14 sites in Zimbabwe, 2013–2016*. AIDS and Behavior. 2019;23:1494-507.
68. Wamoyi J, Stobeanau K, Bobrova N, Abramsky T, Watts C. *Transactional sex and risk for HIV infection in sub-Saharan Africa: a systematic review and meta-analysis*. Journal of the international AIDS society. 2016;19(1):20992.
69. Choudhry V, Ambresin A-E, Nyakato VN, Agardh A. *Transactional sex and HIV risks—evidence from a cross-sectional national survey among young people in Uganda*. Global health action. 2015;8(1):27249.
70. Elmes J, Skovdal M, Nhongo K, Ward H, Campbell C, Hallett TB, et al. *A reconfiguration of the sex trade: how social and structural changes in eastern Zimbabwe left women involved in sex work and transactional sex more vulnerable*. PloS one. 2017;12(2):e0171916.
71. Brown K, Williams DB, Kinchen S, Saito S, Radin E, Patel H, et al. *Status of HIV epidemic control among adolescent girls and young women aged 15–24 years—seven African countries, 2015–2017*. Morbidity and Mortality Weekly Report. 2018;67(1):29.
72. Ramjee G, Daniels B. *Women and HIV in sub-Saharan Africa*. AIDS research and therapy. 2013;10(1):1-9.
73. Ziraba A, Orindi B, Muuo S, Floyd S, Birdthistle IJ, Mumah J, et al. *Understanding HIV risks among adolescent girls and young women in informal settlements of Nairobi, Kenya: Lessons for DREAMS*. PloS one. 2018;13(5):e0197479.
74. Schaefer R, Gregson S, Eaton JW, Mugurungi O, Rhead R, Takaruzza A, et al. *Age-disparate relationships and HIV incidence in adolescent girls and young women: evidence from Zimbabwe*. Aids. 2017;31(10):1461-70.
75. Bajunirwe F, Semakula D, Izudi J. *Risk of HIV infection among adolescent girls and young women in age-disparate relationships in sub-Saharan Africa*. Aids. 2020;34(10):1539-48.
76. Harrison A, Colvin CJ, Kuo C, Swartz A, Lurie M. *Sustained high HIV incidence in young women in Southern Africa: social, behavioral, and structural factors and emerging intervention approaches*. Current Hiv/aids Reports. 2015;12:207-15.
77. Lewis L, Kharsany AB, Humphries H, Maughan-Brown B, Beckett S, Govender K, et al. *HIV incidence and associated risk factors in adolescent girls and young women in South Africa: a population-based cohort study*. PLoS one. 2022;17(12):e0279289.
78. Murewanhema G, Musuka G, Moyo P, Moyo E, Dzinamarira T. *HIV and adolescent girls and young women in sub-Saharan Africa: A call for expedited action to reduce new infections*. IJID regions. 2022;5:30-2.
79. Ramjee G, Daniels B. *Women and HIV in sub-Saharan Africa*. AIDS research and therapy. 2013;10:1-9.
80. Health Mo, Zimbabwe CC. *Young Adult Survey of Zimbabwe: A violence against children study, 2017*. Elizabeth Glaser Pediatric AIDS Foundation Harare, Zimbabwe; 2019.
81. Henderson L, Zerai A, Morrow RL. *Intimate partner violence and HIV status among ever-married and cohabiting Zimbabwean women: an examination of partners' traits*. African journal of reproductive health. 2017;21(4):45-54.
82. Mappingure M, Dzinamarira T, Mukandavire Z, Chingombe I, Cuadros DF, Eghtessadi R, et al. *Understanding the role of intimate partner violence on HIV transmission in Zimbabwe: Secondary data analysis of data from the Zimbabwe demographic survey 2015-2016*. Health promotion perspectives. 2023;13(2):113.

83. Shamu S, Shamu P, Machisa M. *Factors associated with past year physical and sexual intimate partner violence against women in Zimbabwe: results from a national cluster-based cross-sectional survey*. *Global health action*. 2018;11(sup3):1625594.
84. Li Y, Marshall CM, Rees HC, Nunez A, Ezeanolue EE, Ehiri JE. *Intimate partner violence and HIV infection among women: a systematic review and meta-analysis*. *African Journal of Reproduction and Gynaecological Endoscopy*. 2014;17(1).
85. Kuchukhidze S, Panagiotoglou D, Boily M-C, Diabaté S, Eaton JW, Mbofana F, et al. *The effects of intimate partner violence on women's risk of HIV acquisition and engagement in the HIV treatment and care cascade: a pooled analysis of nationally representative surveys in sub-Saharan Africa*. *The Lancet HIV*. 2023;10(2):e107-e17.
86. Kouyoumdjian F, Calzavara L, Bondy S, O'Campo P, Serwadda DN, Nalugoda F. F.,... & Gray, R.(2013). *Risk factors for intimate partner violence in women in the Rakai Community Cohort Study, Uganda, from 2000 to 2009*. *BMC Public Health*.13(1):566.
87. Skovdal M, Clausen CL, Magoge-Mandizvidza P, Dzamatira F, Maswera R, Nyamwanza RP, et al. *How gender norms and 'good girl' notions prevent adolescent girls and young women from engaging with PrEP: qualitative insights from Zimbabwe*. *BMC Women's Health*. 2022;22(1):1-10.
88. Atkins K, Rucinski K, Mudavanhu M, Holmes L, Mutunga L, Kaufman MR, et al. *Sexual relationship types, partner HIV self-testing, and pre-exposure prophylaxis among South African adolescent girls and young women: a latent class analysis*. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2021;86(4):413-21.
89. Slabbert M, Knijn T, de Ridder D. *Improving HIV prevention programs: the role of identity in shaping healthy sexual behavior of rural adolescents in South Africa*. *Vulnerable Children and Youth Studies*. 2015;10(1):93-103.
90. Mappingure M, Mukandavire Z, Chingombe I, Cuadros D, Mutenherwa F, Mugurungi O, et al. *Understanding HIV and associated risk factors among religious groups in Zimbabwe*. *BMC public health*. 2021;21:1-10.
91. Cuadros DF, Li J, Mukandavire Z, Musuka GN, Branscum AJ, Sartorius B, et al. *Towards UNAIDS Fast-Track goals: targeting priority geographic areas for HIV prevention and care in Zimbabwe*. *AIDS*. 2019;33(2):305-14.
92. Nyblade L, Ndirangu JW, Speizer IS, Browne FA, Bonner CP, Minnis A, et al. *Stigma in the health clinic and implications for PrEP access and use by adolescent girls and young women: conflicting perspectives in South Africa*. *BMC public health*. 2022;22(1):1916.
93. Muheriwa Matemba SR, Cianelli R, De Santis JP, Rodriguez NV, Kaponda CC, McMahan JM, et al. *Socio-Ecological Associations of the Development of Sexual Behavior in Young Adolescent Girls in the Rural Southern Region of Malawi*. *The Journal of Early Adolescence*. 2024;44(5):624-66.
94. Agaba PA, Makai R, Bankat CT, Chebu PR, Apena T, Iyaji-Paul O, et al. *Sexual behavior and risk factors for HIV infection among young people aged 15-24 years in North-Central Nigeria*. *Journal of Medicine in the Tropics*. 2016;18(2):60-7.
95. Petroni S, Yates R, Siddiqi M, Luo C, Finnie A, Walker D, et al. *Understanding the relationships between HIV and child marriage: conclusions from an expert consultation*. *Journal of Adolescent Health*. 2019;64(6):694-6.
96. Raj A, Boehmer U. *Girl child marriage and its association with national rates of HIV, maternal health, and infant mortality across 97 countries*. *Violence against women*. 2013;19(4):536-51.
97. Arije OO, Udoh EE, Ijadunola KT, Afolabi OT, Aransiola JO, Omoregie G, et al. *Vulnerability to HIV infection among adolescent girls and young women in Nigeria*. *Vulnerable Children and Youth Studies*. 2021;16(3):267-78.

98. Shaw SA, El-Bassel N. *The influence of religion on sexual HIV risk*. AIDS and Behavior. 2014;18:1569-94.
99. Hallfors DD, Iritani BJ, Zhang L, Hartman S, Luseno WK, Mpofu E, et al. *'I thought if I marry the prophet I would not die': The significance of religious affiliation on marriage, HIV testing, and reproductive health practices among young married women in Zimbabwe*. SAHARA-J: Journal of Social Aspects of HIV/AIDS. 2016;13(1):178-87.
100. Nenge RT. *A hermeneutical challenge in the fight against HIV and AIDS in the Johane Marange Apostolic Church*. Exchange. 2013;42(3):252-66.
101. Kassahun EA, Gelagay AA, Muche AA, Dessie AA, Kassie BA. *Factors associated with early sexual initiation among preparatory and high school youths in Woldia town, northeast Ethiopia: a cross-sectional study*. BMC public health. 2019;19:1-8.
102. Agbaria Q, Mahamid F, Ziya Berte D. *Social support, self-control, religiousness and engagement in high risk-behaviors among adolescents*. The International Journal of Indian Psychology. 2017;4(4):13-33.
103. Chandra-Mouli V, Svanemyr J, Amin A, Fogstad H, Say L, Girard F, et al. *Twenty years after International Conference on Population and Development: where are we with adolescent sexual and reproductive health and rights?* Journal of Adolescent Health. 2015;56(1):S1-S6.
104. Skovdal M, Magoge-Mandizvidza P, Dzamatira F, Maswera R, Nyamukapa C, Thomas R, et al. *Improving access to pre-exposure prophylaxis for adolescent girls and young women: recommendations from healthcare providers in eastern Zimbabwe*. BMC Infectious Diseases. 2022;22(1):399.
105. Skovdal M, Magoge-Mandizvidza P, Maswera R, Moyo M, Nyamukapa C, Thomas R, et al. *Stigma and confidentiality indiscretions: intersecting obstacles to the delivery of pre-exposure prophylaxis to adolescent girls and young women in East Zimbabwe*. Remaking HIV prevention in the 21st century: the promise of TasP, U= U and PrEP. 2021:237-48.
106. Kurebwa J. *Knowledge and perceptions of adolescent sexual and reproductive health issues among rural adolescence in Gutu rural district of Zimbabwe*. International Journal of Advanced Research and Publications. 2017;1(1):15-9.
107. Makunika N, Manyange L. *Determinants of HIV Prevention amongst Adolescents in Zimbabwe: The Case of Dzivarasekwa, Harare*. International Journal of Sexual and Reproductive Health Care. 2020;3(1):051-60.
108. Ninsiima LR, Chiumia IK, Ndejjo R. *Factors influencing access to and utilisation of youth-friendly sexual and reproductive health services in sub-Saharan Africa: a systematic review*. Reproductive health. 2021;18:1-17.
109. Lanham M, Ridgeway K, Mireku M, Nhamo D, Pillay D, Murire M, et al. *Health care providers' attitudes toward and experiences delivering oral PrEP to adolescent girls and young women in Kenya, South Africa, and Zimbabwe*. BMC Health Services Research. 2021;21:1-12.
110. Fleischman J, Peck K. *Addressing HIV risk in adolescent girls and young women*: JSTOR; 2015.
111. Muwonwa N. *'Subverting Controls': Historicising the Multi-dimensions of Female Youth Sexuality in Post-colonial Zimbabwe*. Fending for Ourselves: Youth in Zimbabwe, 1980-2020. 2021:158.
112. Barr-DiChiara M, Tembo M, Harrison L, Quinn C, Ameyan W, Sabin K, et al. *Adolescents and age of consent to HIV testing: an updated review of national policies in sub-Saharan Africa*. BMJ open. 2021;11(9):e049673.
113. Mollel GJ, Katende A, Shahmanesh M. *LEGAL AGE OF CONSENT FOR HIV TESTING AMONG ADOLESCENTS IN SUB SAHARAN AFRICA, A SYSTEMATIC REVIEW*. medRxiv. 2022:2022.05. 17.22275222.
114. Mwambene L. *Recent legal responses to child marriage in Southern Africa: The case of Zimbabwe, South Africa and Malawi*. African human rights law journal. 2018;18(2):527-50.

115. Zhou S, Landa N, Zhou IN. *Communicating reproductive rights to marginalised girls and teenage mothers at risk of HIV infection in rural Zimbabwe*. *Alternation Journal*. 2016;23(2):309-23.
116. McKinnon B, Vandermorris A. *National age-of-consent laws and adolescent HIV testing in sub-Saharan Africa: a propensity-score matched study*. *Bulletin of the World Health Organization*. 2019;97(1):42.
117. Chikava T, Eghtessadi R, Chingombe I, Murewanhema G, Cheza A, Dzinamarira T, et al. *Zimbabwean law and its impact on HIV programmes for key populations*. *Frontiers in Public Health*. 2023;11:1272775.
118. Busza J, Mtetwa S, Mapfumo R, Hanisch D, Wong-Gruenwald R, Cowan F. *Underage and underserved: reaching young women who sell sex in Zimbabwe*. *AIDS care*. 2016;28(sup2):14-20.
119. Chiyaka T, Mushati P, Hensen B, Chabata S, Hargreaves JR, Floyd S, et al. *Reaching young women who sell sex: methods and results of social mapping to describe and identify young women for DREAMS impact evaluation in Zimbabwe*. *PloS one*. 2018;13(3):e0194301.
120. Kamire V, Magut F, Khagayi S, Kambona C, Muttai H, Nganga L, et al. *HIV risk factors and risk perception among adolescent girls and young women: results from a population-based survey in western Kenya, 2018*. *Journal of acquired immune deficiency syndromes (1999)*. 2022;91(1):17-25.
121. Chapman J, do Nascimento N, Mandal M. *Role of male sex partners in HIV risk of adolescent girls and young women in Mozambique*. *Global Health: Science and Practice*. 2019;7(3):435-46.
122. International. ZNSAaI. *Zimbabwe Demographic and Health Survey 2015: Final Report* Rockville, Maryland, USA: Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. ; 2016 [Available from: <https://dhsprogram.com/pubs/pdf/FR322/FR322.pdf>].
123. (ZIMSTAT) ZNSA. *A story of Inequality*. 2014.
124. Muperere SB, Makochekanwa A, Moyo S, Mhloyi M. *Socioeconomic Determinants of Use of HIV Testing Services among Gender Based Violence (GBV) Survivors in Matabeleland South, Zimbabwe*. *Tanzanian Economic Review*. 2022;11(2).
125. Handa S, Halpern CT, Pettifor A, Thirumurthy H. *The government of Kenya's cash transfer program reduces the risk of sexual debut among young people age 15-25*. *PloS one*. 2014;9(1):e85473.
126. Decker MR, Peitzmeier S, Olumide A, Acharya R, Ojengbede O, Covarrubias L, et al. *Prevalence and health impact of intimate partner violence and non-partner sexual violence among female adolescents aged 15–19 years in vulnerable urban environments: a multi-country study*. *Journal of Adolescent Health*. 2014;55(6):S58-S67.
127. Mabaso M, Mlangeni L, Makola L, Oladimeji O, Naidoo I, Naidoo Y, et al. *Factors associated with age-disparate sexual partnerships among males and females in South Africa: a multinomial analysis of the 2012 national population-based household survey data*. *Emerging themes in epidemiology*. 2021;18:1-13.
128. Harling G, Newell M-L, Tanser F, Kawachi I, Subramanian SV, Bärnighausen T. *Do age-disparate relationships drive HIV incidence in young women? Evidence from a population cohort in rural KwaZulu-Natal, South Africa*. *Journal of acquired immune deficiency syndromes (1999)*. 2014;66(4):443-51.
129. (UNFPA) UNFfPA. *Harmonizing the Legal Environment for Adolescent Sexual and Reproductive Health and Rights*. 2017.
130. UNAIDS. *National commitments and policy instrument 2017–2022*. Geneva: Joint United Nations Programme on HIV/AIDS Geneva; 2023.

131. Adan FI, Githae M, Githae C. *Factors influencing access to reproductive health information services among young aged 15-24 in Garissa Municipality, Kenya*. Int J Contemp Res Rev. 2018;9(08):20537-74.
132. Agüero JM, Bharadwaj P. *Do the More Educated Know More about Health? Evidence from Schooling and HIV Knowledge in Zimbabwe*. Economic Development and Cultural Change. 2014;62(3):489-517.
133. Chanda-Kapata P, Klinkenberg E, Maddox N, Ngosa W, Kapata N. *The prevalence and socio-economic determinants of HIV among teenagers aged 15–18 years who were participating in a mobile testing population based survey in 2013–2014 in Zambia*. BMC Public Health. 2016;16:1-7.

Annexes

Annex 1: Interview Guide for key informants

Researcher: Fadzai Taderera

Research Topic: Factors contributing to the vulnerability of young women aged between 15-24 to HIV in Zimbabwe?

Name (Optional)..... Sex

Gender.....Profession.....

SECTION A

1. BACKGROUND INFORMATION

- Can you describe your role in the HIV program, and how long have you been working in this capacity?
- What is your experience regarding working with young women aged between 15-24 in HIV/AIDS programming?

2. INDIVIDUAL LEVEL

- What is the vulnerability status of young women to HIV, compared to other age groups?
- What common risk behaviours do you observe among young women in this age group that contribute to their vulnerability to HIV?
- How well-informed are young women about HIV prevention and safe practices?
- What are some of the young women’s attitudes, knowledge, and practices related to HIV transmission?

3. INTERPERSONAL LEVEL

- How do relationships with family and peers affect young women’s risk of HIV?
- What factors within intimate relationships do you believe contribute to an increased risk of HIV transmission or exposure?
- How do transactional sex and age-disparate relationships impact the vulnerability of young women to HIV?

4. COMMUNITY FACTORS

- How does community support (or lack of it) influence young women’s vulnerability to HIV?
- What are the types of stigma or discrimination related to HIV in the community and how does this affect young women?

- What are the cultural and gender norms that exist that impact individual choices and behaviours that may contribute to vulnerability to HIV among young women?

5. INSTITUTIONAL FACTORS

- What factors hinder young women from accessing HIV prevention, treatment, and counselling services? Additionally, what facilitators exist that enable their access to these services?
- What interventions are in place to ensure that young women have access to accurate health information?
- How does the quality of services offered to young women impact their ability to reduce risk?
- How do financial constraints within the health system affect the provision of preventative and care services to young women engaged in risky behaviours? How can this be improved?
- How prepared are healthcare workers to address the specific needs of young women vulnerable to HIV? Do you receive support? or training?
- How do you perceive the availability and accessibility of modern medication and products (Condoms, Prep, Prep, Injectables) needed for the prevention and treatment of HIV among young women?

6. STRUCTURAL LEVEL

- From your perception, how do institutional practices or policies within schools, workplaces, or other organizations affect the vulnerability of young women to HIV?
- What policies, if any, exist to address the vulnerability of young women to HIV? How do these policies impact vulnerability, both positively and negatively?

7. RECOMMENDATIONS

- Based on your experience, what interventions or programs can be put in place to reduce the vulnerability of young women to HIV in Zimbabwe
- What strategies can be employed to improve HIV prevention and care for young women? By healthcare providers, policymakers, and communities?

8. CONCLUSION

- Is there anything else you would like to add regarding the vulnerability of young women to HIV?
- Thank you for your time and insights. Should any further discussions be needed. I will follow up with You.

Annex 3: Consent form for interview participants

Study Title: Factors Contributing to HIV Vulnerability Among Young Women (15-24 yrs) in Zimbabwe

Principal Investigator: Fadzai Macyln Taderera, KIT Royal Tropical Institute

Introduction: You are being invited to participate in a research study conducted by Fadzai Macyln Taderera, as part of a master's thesis project at KIT Royal Tropical Institute. The purpose of this study is to understand the factors contributing to HIV vulnerability among young women aged between 15-24 years in Zimbabwe.

If you agree to participate, you will be asked to take part in an interview where you will be asked questions about your knowledge, insights, and professional experiences related to HIV programming and young women's vulnerability to HIV in Zimbabwe. The interview is expected to last approximately twenty minutes. Your participation in this study is confidential and any information you provide will be anonymized and will only be used for research purposes. Your name and any identifying information will not be included in any reports or publications resulting from this study.

Participation in this study is entirely voluntary. You have the right to decline to participate or to withdraw from the study at any time, without facing any negative consequences. There are no direct benefits to participating in this study. However, your insights and experiences will contribute to interventions aimed at addressing HIV vulnerability among young women in Zimbabwe. Participating in the interview involves minimal risk, as the questions are non-invasive and focus solely on your professional experiences.

If you have any questions about the study or your participation, please feel free to contact: Fadzai Taderera, fadzaitm@gmail.com, +263783711397

Consent:

I have read and understand the information provided in this consent form. I have had the opportunity to ask questions and have received satisfactory answers. By signing below, I voluntarily agree to participate in the interview.

Participant

Signature:

Date: _____

