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Review Article

Understanding How Social Factors Influence Health Outcomes for Women Living with HIV in Sub-Saharan Africa: A Systematic Review

Evelyn Foster-Pagaebi[1], Buniminaki Nimi James[2], Tamunomiebi Douglas[3], Amavie Oboku[4], Kitgak Bala Simon[5], Pagaebi Garcia Ezeke[6], Uchechi Ekezie[7], Elishama Tamunomiebi Douglas[8]

[1]*Department of Clinical Pharmacy, Niger Delta University, Bayelsa, Nigeria*
[2]*Department of Obstetrics & Gynecology, Dames' Infirmary Hospital and Maternity, Bayelsa, Nigeria*
[3]*Department of Program/Management, Real Talks Concepts, Abuja, Nigeria*
[4]*Department of Programs, Knowledge Network for Disease Control and Vigilance, Lagos, Nigeria*
[5]*Department of Research, Rural Empowerment and Climate Technology Initiative, Plateau, Nigeria*
[6]*Faculty of Science, Niger Delta University, Bayelsa, Nigeria*
[7]*Department of Emergency, Preparedness, Readiness and Response, World Health Organization, Abuja, Nigeria*
[8]*Department of Program Implementation, Real Talks Concepts, Rivers, Nigeria*

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Corresponding author's email:
evelynfoster2020@gmail.com

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ABSTRACT

Background: The health outcomes of women living with the Human Immunodeficiency Virus (HIV) in sub-Saharan Africa remain poor, despite global efforts to improve access to antiretroviral therapy. Social determinants have been identified as key factors contributing to these disparities, however, evidence remains limited. This systematic review aims to synthesize evidence on the association between social factors and health outcomes among women living with HIV in sub-Saharan Africa.

Methods: A systematic review was conducted following the PRISMA 2020 guidelines. Peer-reviewed articles published between January 2015 and November 2025 were identified through an extensive literature search in PubMed/Medline, Web of Science, and Google Scholar. The search yielded 1,589 studies, of which 23 were included in the final analysis. A thematic approach was used to synthesize eligible studies that examined one or more social factors and reported health outcomes.

Results: Twenty-three studies were included in the review, comprising 13 quantitative (11 cross-sectional and 2 cohort) and 10 qualitative studies across sub-Saharan Africa. After quality appraisal, 20 studies were rated as high quality, while 3 were moderate. None was classified as low quality. The main social factors influencing treatment outcomes included HIV-related stigma, socioeconomic status, gender norms, intimate partner violence, healthcare access, cultural and religious beliefs, and social support. These factors were consistently linked to late testing, poor antiretroviral therapy adherence, low retention in care, low viral suppression, and adverse mental health outcomes. Conversely, social support networks, peer-based interventions, and community- and faith-based care were associated with improved ART adherence, empowerment, and quality of life.

Discussion: These findings emphasize that social determinants do not function in isolation but through interconnected structural, community, and interpersonal pathways, creating both risks and protections for health outcomes.

Conclusion: Intersecting social and structural determinants of health impact outcomes among women living with HIV in sub-Saharan Africa. Addressing these factors requires integrated, gender-responsive, and community-empowering strategies beyond biomedical treatment alone.

Keywords: Women Living with HIV; HIV/AIDS, Social Determinants of Health; Social Factors; Health Outcomes; Sub-Saharan Africa

Introduction

Background

Sub-Saharan Africa (SSA) has experienced a disproportionately high burden of the human immunodeficiency virus (HIV), with women being the most affected. In SSA, women and girls account for over 63% of all new HIV infections in 2024 [1]. The availability and use of antiretroviral therapy (ART) drugs improve the health of people living with HIV (PLHIV), with sustained viral suppression significantly reducing HIV transmission risk [2]. However, women living with HIV (WLHIV) still experience disparities in clinical outcomes, such as poor viral suppression, low retention in care, and poor quality of life. These disparities in clinical outcomes have been attributed to social factors that shape them. Such social factors are fueled by the socioeconomic, structural, gender, and cultural environments in which women live. They have been identified as playing a critical role in influencing health outcomes in this vulnerable population [3].

Rationale

Health outcomes in different populations are shaped by the conditions in which people are born, including the environments in which they live and work**.** In SSA, where women are largely affected by HIV, several social factors intersect to shape their health, including socioeconomic status, limited healthcare access, stigma, gender norms, and intimate partner violence (IPV) [4]. These social and relational dynamics are particularly critical in serodiscordant relationships, where disclosure, partner support, and power imbalances significantly shape treatment adherence, mental health, and overall health outcomes among PLHIV [5]. These factors determine the extent to which WLHIV adhere to ART, the kind of mental health experience they have, and the quality of life they live [6]. This review examines these social factors and their influence on health outcomes among WLHIV across SSA.

While several reviews have examined individual social determinants such as stigma, gender-based violence, or ART adherence among people living with HIV in SSA, few have provided an integrated synthesis that simultaneously considers multiple intersecting social determinants and their combined influence on diverse health outcomes, specifically among women. Additionally, limited attention has been paid to the interaction between traditional social determinants and emerging factors, such as digital health interventions, within a unified theoretical framework. Unlike previous reviews that examine individual determinants, this study integrates the Social Determinants of Health (SDH) and Socio-Ecological Model (SEM) frameworks to move beyond single-determinant analyses toward an intersectional, systems-level understanding of how social factors influence health outcomes among WLHIV in SSA [7, 8].

Objectives

This review aims to explore how social factors influence health outcomes among WLHIV in SSA. Specific objectives include identifying the major social factors affecting WLHIV in SSA, examining how these factors interact to shape health outcomes among WLHIV, examining the key health outcomes of such interactions, and providing key recommendations for policy, practice, and future research.

Research Question

The research question is as follows: What social factors influence health outcomes among WLHIV in SSA? What impacts do these factors have on health outcomes, and what is the nature of the associations of these social factors on health outcomes in WLHIV?

Frameworks Guiding the Understanding of Health Outcomes in WLHIV in SSA

WLHIV in SSA experience health outcomes driven by a complex interplay of several factors. To fully comprehend these influences, two theoretical frameworks are employed: the Social Determinants of Health (SDH) and the Socio-Ecological Model (SEM). The Social Determinants of Health (SDH) framework describes the conditions in which people are born, grow, live, work, and age, and how these conditions influence health outcomes. It distinguishes between upstream (structural) determinants such as socioeconomic status (income, education, employment, housing, nutrition, and overall quality of life); gender norms (power imbalances, autonomy in decision-making, and vulnerability to HIV); and political environment (policies, legal protection and funding for HIV services), and intermediate determinants including access to healthcare (availability of HIV treatment, maternal health services, mental health support); stigma and discrimination (social exclusion, internalized shame, fear of disclosure); and social support (family, friends and community support) [7, 8]. These determinants interact to influence health inequities across populations.

The SEM complements this by demonstrating how individual factors (knowledge, beliefs, history of trauma, treatment adherence), interpersonal factors (family, partners, and peer relationships), community factors (local health services, social networks, cultural norms), and structural influence (health infrastructures, policies, and laws) affect health outcomes [9]. Integrating the SDH and SEM frameworks provides a comprehensive understanding of how layered social factors determine health outcomes among WLHIV in

SSA. These frameworks provide opportunities to identify gaps and to carry out strategic interventions. The interaction between these frameworks is presented in Figure 1.

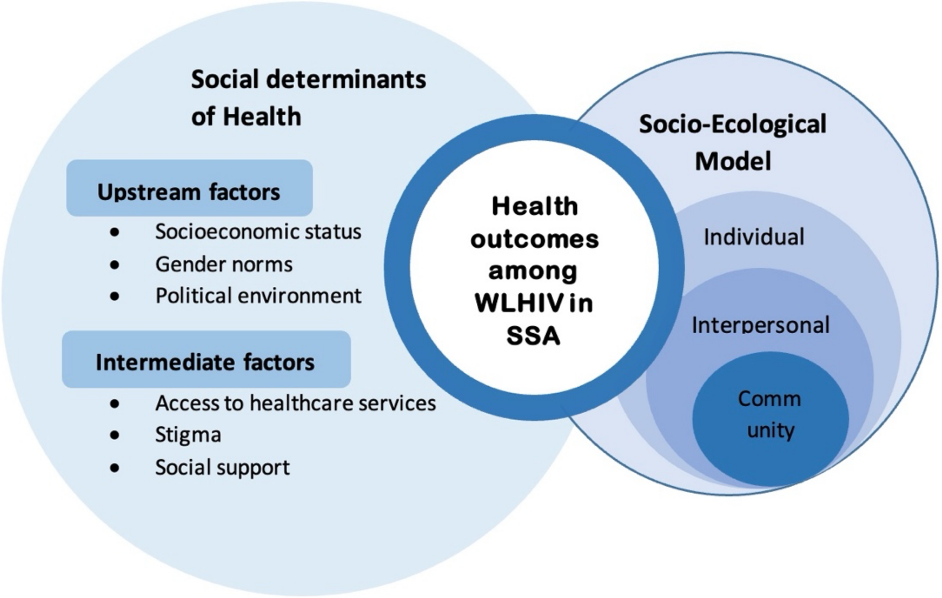

Figure 1. Integrated Socio-Ecological and Social Determinants Framework for Understanding Health Outcomes among Women Living with HIV in sub-Saharan Africa (Adapted by the Authors from [7, 8])

This framework integrates the Social Determinants of Health and Socio-Ecological Model to conceptualize how upstream structural factors, such as socioeconomic position, gender norms, policy context, and intermediate determinants, including stigma, healthcare access, and social support, interact across multiple levels to influence HIV-related outcomes, including treatment adherence, viral suppression, and psychosocial well-being. At the structural level (SDH), poverty constrained access, while at the interpersonal level (SEM), IPV directly disrupted adherence.

Scope of the study

This review focuses on WLHIV in SSA. It examines how social factors interplay to shape health outcomes among WLHIV in SSA. The scope of this study is summarized in Table 1.

Table 1: Summary of the scope of study

Population	Women aged 18 years and above living with HIV in SSA and sex disaggregated data.
Social factors	Socioeconomic status, gender norms, stigma/discrimination, IPV, cultural and religious influences, healthcare access, and social support
Outcomes	ART adherence, retention in care, viral suppression, mental health (depression, anxiety), quality of life, and mortality/morbidity
Study Designs	Quantitative, qualitative, or mixed-method studies published between January 2015 and November 2025, in English, and focused on SSA settings.

Methods

Study Design

This study employed a systematic review and sought to synthesize evidence on how social factors influence health outcomes among WLHIV in SSA. The review was not prospectively registered in PROSPERO. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines was followed to ensure a transparent, reproducible, and comprehensive summary of existing literature [10].

Eligibility Criteria (PECO Framework)

The review was structured using the PECO (Population, Exposure, Comparison, Outcome) framework, which is appropriate for examining associations between social exposures and health outcomes in observational studies [11]. The PECO framework for this review includes:

Population: Women aged 18 years and above living with HIV in sub-Saharan Africa (including studies with gender-disaggregated data).

Exposure: Social determinants such as socioeconomic status, stigma, gender norms, intimate partner violence, healthcare access, and social support.

Comparison: Variation in exposure levels or absence of exposure.

Outcomes: ART adherence, retention in care, viral suppression, mental health, and quality of life.

Inclusion Criteria

Studies were included if they were conducted in countries within SSA; focused on WLHIV 18 years and above or provided sex disaggregated data for male and female; peer-reviewed empirical studies (qualitative, quantitative, or mixed methods) which investigated one or more social factors; reported measurable health outcomes (e.g., ART adherence, mental health, viral suppression, quality of life); studies published between January 2015 and November 2025, and publications in English.

Exclusion Criteria

Studies were excluded if they focused solely on biomedical or clinical determinants; if they were conference abstracts, dissertations, or commentaries without primary data; if they focused on children, male-only data, or the general population; if they were outside the SSA region; or if they were published in languages other than English.

Search Strategy

A comprehensive literature search was conducted across PubMed/Medline, Web of Science, and Google Scholar, covering publications between January 2015 and November 2025. Search terms were developed using the following keywords: Women living with HIV, HIV/AIDS (Acquired Immunodeficiency Syndrome), social determinants of health, social factors, health outcomes, and sub-Saharan Africa. Boolean operators "AND" and "OR" were used to combine keywords for the search. The full search strings and results are provided in Supplementary material, Table 1.

A manual search was also carried out to map evidence not covered by the initial search and to ensure the evidence was comprehensive.

Study Selection

All retrieved papers were imported into EndNote to manage references and remove duplicates. The screening process was conducted in two phases: title and abstract screening to remove articles that do not pertain to the research problem, and full-text screening to verify eligibility against the inclusion criteria. Two independent reviewers conducted the screening, and any discrepancies were resolved through discussion or by a third reviewer to reduce bias.

Data Extraction and Synthesis

A data extraction form was designed following a standardized format to extract relevant information on each eligible study, such as author(s) names and year, country, study design, population and sample size, type of social factors studied, key findings and health outcomes, and recommendations/policy implications. This systematic extraction allowed for consistent synthesis of findings across studies.

The findings were analyzed using a thematic synthesis approach. The data were grouped into broad areas of social aspects (e.g., socioeconomic status and gender norms, stigma/discrimination, IPV), cultural and religious influences, access to healthcare and social support). The trends and variations across contexts and populations were examined to gain in-depth insights.

Critical Appraisal of Included Studies

Quality appraisal was conducted independently by two reviewers using the Joanna Briggs Institute (JBI) critical appraisal tools appropriate for each study design (Barker et al., 2025) [12]. Discrepancies were resolved through discussion, and where necessary, consultation with a third reviewer. Studies were categorized as high, moderate, or low quality based on methodological rigor. The appraisal results informed the interpretation of findings but did not lead to the exclusion of studies.

Ethical Considerations

This study did not involve human subjects; therefore, it did not require ethical approval. It used publicly available published data accessed through several databases. The review followed transparent research principles.

Results

Overview of Study Selection

The database search yielded 1,589 records. After removal of 18 duplicates, 1,571 records remained for screening. Title and abstract screening excluded 1386 articles that did not meet the eligibility criteria. A total of 185 full text articles were assessed for eligibility, of which 162 were excluded due to reasons such as lack of sex disaggregated data, exclusive focus on biomedical determinants, non-SSA settings, or absence of measurable health outcomes. Ultimately, 23 studies met the inclusion criteria and were included in the final synthesis. The PRISMA flow diagram summarizing the selection process is presented in Figure 2.

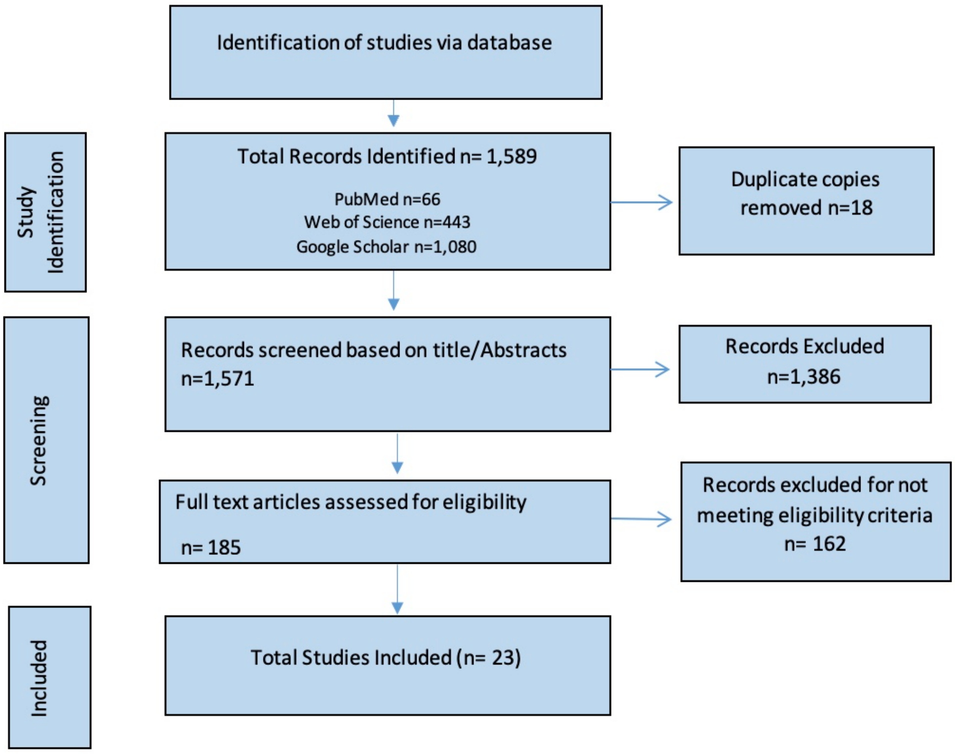

Figure 2. PRISMA Diagram Showing the Study Selection Process

Characteristics of Included Studies

The 23 studies included in the final synthesis were published between January 2015 and November 2025, and were widely spread geographically in SSA, with the highest representation from South Africa and Nigeria. There were 13 quantitative (11 cross-sectional, 2 cohort) and 10 qualitative (interviews and focus group discussions) studies. The sample sizes ranged from small qualitative focus group discussions with 7 participants to large cross-sectional surveys comprising more than 2,000 women. The vast majority of the studies considered pregnant and postpartum WLHIV, while the rest considered adult women throughout the HIV care continuum [13, 14]. Among the key social factors identified were socioeconomic status, gender norms, stigma and discrimination, IPV, cultural and religious influence, access to healthcare services (including digital technology), social support, and community network [6, 15]. ART adherence, retention in care, viral suppression, mental health outcomes (depression and anxiety), quality of life, and maternal morbidity were the key health outcomes assessed [16, 17]. Data extraction for the included studies is presented in Table 2.

Table 2. Data Extraction Form showing all included studies

S/N	Author(s)/Year	Country	Study design	Population/ sample size	Key social factor(s)	Key findings and health outcomes	Recommendations (If any)
1	Augustine et al., 2022	Nigeria	Qualitative	WLHIV (n=40)	Gender discrimination, HIV stigma	Poor mental health and reduced quality of life were linked to the patriarchal and polygamous system, where discrimination, stigmatization, and gender inequality against women are an acceptable norm	A collaborative community-based approach by psychologists and social workers in creating awareness and enhancing understanding of gender discrimination and HIV stigma at a macro level.
2	Becker N et al., 2020	Eswatini	Qualitative	Rural WLHIV (n=48)	Poverty, Lack of food, and transport barriers. Unemployment	Social factors identified as critical barriers to ART adherence and retention among rural WLHIV in Eswatini	ART programmes should ensure timely and easy access to medication for women in rural communities, particularly those with limited financial resources.
3	Azia et al., 2016	South Africa	Qualitative	WLHIV (n=18)	Stigma/unemployment	Stigma, unemployment, lack of transport, insufficient feeding, disability grants, and	Interventions to address poverty, stigma, discrimination, and disclosure should be

S/N	**Author(s)/Year**	**Country**	**Study design**	**Population/ sample size**	**Key social factor(s)**	**Key findings and health outcomes**	**Recommendations (If any)**
						alternative forms of therapy were identified as major barriers to adherence.	integrated with group-based ART adherence models.
4	Steinert et al., 2017	South Africa	Cross-sectional	Total participants (n=2477). MLHIV (n=278); WLHIV (n=2199)	Poverty, unemployment	A higher level of household poverty was associated with a higher likelihood of being severely ill or unwell with HIV.	Enhancing access to welfare for those in need.
5	Parcesepe et al., 2017	Ethiopia	Cohort	WLHIV (n=722)	Household decision-making power	Women with low decision-making power (DMP) reported lower health-related quality of life compared to women with medium or high decision-making power. Women with low DMP reported the highest prevalence of psychological distress and non-adherence.	Greater attention is needed to the role of gender equality in the health and well-being of WLHIV.
6	Mpofu & Ganga-Limando, 2024a	Zimbabwe	Qualitative (FGDs)	Rural WLHIV (n=24)	Cultural norms, Religion, Stigma, and social exclusion.	Loss of social belonging, reduced Quality of life (QoL), and food insecurity.	Improve community health care and increase opportunities for empowerment among rural WLHIV.
7	Sorkpor et al., 2025	Ghana	Cross-sectional	WLHIV (n=176)	HIV related stigma and depression. Internalized HIV stigma.	Internalized stigma as a key psychological mechanism linking social adversity to poor mental health in this population.	Integrating stigma-reduction strategies and targeted mental health support into postnatal HIV care.
8	Yator et al., 2021	Kenya	Cross-sectional	WLHIV (n=123)	Stigma and mental health burden	Interaction between HIV-related stigma and postpartum depression (PPD). Internalized stigma affects how WLHIV view themselves and how they cope socially.	HIV-related stigma should be addressed through integrated mental health care programs in PMTCT (Prevention of Mother-to-Child Transmission of HIV).
9	Aloyce et al., 2020	Tanzania	Cross-sectional	WLHIV (n=659)	IPV	Participants with HIV-related stigma had an increased risk of experiencing IPV following disclosure. In addition, participants with an appreciative relationship with their partners had a reduced risk of experiencing IPV.	To reduce IPV, work with known perpetrators to prevent their continued use of violence, safety planning for WLHIV who are at risk of experiencing violence, and advancing interventions that focus on safe disclosure.
10	Onono et al., 2020	Kenya	Cross-sectional	WLHIV (n=200)	Depression, Stigma, IPV	Women who experienced stigma or IPV were more likely to miss clinic visits, report difficulty taking ART drugs, and not take medication as prescribed.	There is a need to develop tailored psychosocial interventions within PMTCT programs that appropriately address mental health, stigma, and violence.
11	Alhassan et al., 2022	South Africa & Uganda	Qualitative	WLHIV (n=104)	Poverty, low HIV knowledge, lack of privacy, Stigma, and negative provider attitudes	Late antenatal initiation, poor ART adherence due to poverty, provider attitudes, and stigma	Improve privacy, provider attitudes, health literacy, and empowerment.
12	Pepper, 2023	South Africa	Qualitative	WLHIV (n=10)	Stigma, poverty, and	Stigma and poverty were major barriers to adherence	Enhance community-led support programmes

S/N	**Author(s)/Year**	**Country**	**Study design**	**Population/ sample size**	**Key social factor(s)**	**Key findings and health outcomes**	**Recommendations (If any)**
					community support		
13	Mpofu & Ganga-Limando, 2024b	Zimbabwe	Qualitative (Interviews + FGDs)	WLHIV (n=40)	Cultural discrimination, Social prejudice	Psychosocial dysfunction, high social discrimination	Community-level stigma reduction interventions
14	Jia et al., 2025	Nigeria	Cross-sectional	WLHIV (n=320)	Healthcare access, stigma, and socioeconomic factors	Barriers include transport cost, long clinic distances, clinic delays, stigma, and poor provider attitudes. Socioeconomic hardship and gender norms reduced consistent ART uptake.	Improve ART service accessibility, decentralize PMTCT clinics, provide transport support, train providers, and reduce stigma.
15	Young et al., 2024	Nigeria	Cohort	WLHIV (n=1535)	Retention in care, ART adherence, Postpartum follow-up	ART retention dropped significantly during the postpartum period. Adherence challenges increased due to childcare burden, socioeconomic stress, and stigma.	Strengthen postpartum follow-up models; implement community-based adherence support; integrate maternal-child HIV care.
16	Crusto et al., 2025	South Africa	Qualitative	WLHIV (n=7)	Social support, Digital interventions, Psychosocial needs	Interactive SMS support groups increased psychosocial well-being, reduced isolation, and improved PMTCT engagement. Women reported feeling supported, less alone, and more knowledgeable about HIV care. Digital peer support improved empowerment and adherence.	Scale interactive digital support groups; integrate psychosocial support into PMTCT programmes.
17	Tizie et al., 2023	Ethiopia	Cross-sectional	PLHIV (n=423). MLHIV (n=152) and WLHIV (n=258)	Digital health access, ART adherence, and technology acceptance	Cell phones perceived as useful tools for reminders and adherence monitoring. Barriers included phone ownership, cost, fear of stigma, and concerns about confidentiality. Positive attitudes toward mHealth were associated with greater willingness to use digital adherence tools.	Expand mobile-access programs; address stigma and privacy concerns; reduce cost barriers for phone ownership.
18	Ezelote et al., 2025	Nigeria	Qualitative (In-depth interviews)	PLHIV (n=50). MLHIV (23), WLHIV (27)	M-health usability, Treatment adherence support	m-health reminder features improved medication adherence, clinic attendance, and self-management.	Strengthen m-health reminder systems; provide user training; improve device accessibility; integrate digital adherence tools into routine HIV care.
19	Ameyaw et al., 2024	Ghana	Cross-sectional	WLHIV (n=176)	Social support	Social support was not significantly associated with adherence; age & rival-wife dynamics mattered.	Targeted retention interventions considering household dynamics.
20	Christina et al., 2020	South Africa	Cross-sectional	WLHIV (n=200)	Stigma, Depression, Social support	Depression & stigma reduce support; support improves PMTCT adherence.	Screen for depression; strengthen psychosocial support.
21	Seffren et al., 2018	Uganda	Cross-sectional	WLHIV (n=288)	Social support, Coping	Higher family support reduces depression/anxiety; coping strategies are linked to poor mental health.	Integrate psychosocial interventions.
22	Laurenzi et al., 2022	Malawi, Tanzania,	Qualitative	WLHIV (n=32)	Social support,	Peer support improved psychosocial well-being.	Scale peer-support structure.

S/N	Author(s)/Year	Country	Study design	Population/ sample size	Key social factor(s)	Key findings and health outcomes	Recommendations (If any)
		Uganda, Zambia			Peer influence		
23	Odimegwu et al., 2018	Nigeria	Cross-sectional	Households (n=36064)	Stigma, discrimination.	Expression of negative belief and discriminating behaviour toward WLHIV.	Comparative analysis of various strategies for economic viability.

Thematic Synthesis of Social Determinants Influencing Health Outcomes among WLHIV

Socioeconomic Status and Gender Norms

Across the reviewed studies, poverty, unemployment, lack of food security, and limited educational attainment were found to be pervasive barriers to optimal HIV-related health outcomes among WLHIV [18]. Some studies indicated that women often missed clinic appointments or interrupt treatment due to conflicting economic pressures and caregiving responsibilities [19]. This is further reinforced by evidence showing that postpartum women frequently prioritized childcare and household survival over treatment adherence, particularly in resource-constrained settings where economic vulnerability is acute [20]. In addition, these socioeconomic limitations were further compounded by gender norms and patriarchal power structures [4]. Women who had low autonomy in the decision-making process in the household were less likely to initiate or adhere to ART, disclose their HIV status, and/or seek support [21]. The interaction between gender norms and poverty created a reinforcing cycle that undermined both physical and psychological health outcomes [18]. Evidence linking socioeconomic disadvantage and gender inequality to poor HIV-related outcomes was strong and highly consistent across both qualitative and quantitative studies.

HIV-Related Stigma and Psychosocial Outcomes

Another repeatedly reported social factor that affected health outcomes in women was HIV-related stigma, either experienced, anticipated, or internalized [15]. Gendered stigma was especially vocal, as HIV is commonly presented as a sign of sexual immorality in women [4]. Internalized stigma was found to be a key mediator between social adversity and the outcome of poor mental health [22]. This relationship is further substantiated by evidence demonstrating a significant association between HIV-related stigma and postpartum depression among women attending prevention of mother-to-child transmission (PMTCT) HIV services, underscoring the compounded psychological burden experienced during the perinatal period [23]. Evidence also show that stigma was strongly associated with depression, anxiety, delayed initiation of ART, low levels of adherence, and reduced quality of life [16, 24]. Fear of disclosure, social exclusion, and discriminatory treatment in families, communities, workplaces, and even in healthcare settings were also commonly reported by WLHIV [25].

Intimate Partner Violence (IPV) and Gender Power Dynamics

IPV was reported to be a key determinant of HIV infections among women in SSA [26]. It is significantly associated with HIV non-disclosure, stigma, and gender power inequities [14]. Several women were faced with the risk of physical, sexual or emotional abuse after revealing their HIV status to their partners, especially in contexts where male partners had greater power and autonomy [25]. There was a positive relationship between IPV and missed clinic visits, poor ART adherence, depressive symptoms, and reduced probability of viral suppression [27]. The fear of violence deterred disclosure and diminished the capacity of women to negotiate safe sex or regular treatment use [14].

Cultural and Religious Influences

Religious beliefs and cultural norms also influenced the health outcomes of WLHIV in a complex and dual way [28]. On one hand, viewing HIV as a punishment for immoral behaviour increased stigma, promoted gender discrimination, and delayed care-seeking [4]. Cultural expectations of female purity worsened social isolation and internalized shame following an HIV diagnosis [28]. On the other hand, faith-based and cultural institutions also provided vital emotional support, social connection, and resilience for many [29]. Therefore, the impact of culture and religion was highly context-dependent, serving either as a protective or a risk factor.

Healthcare Access and System Barriers

Healthcare access was another crucial social factor that influenced health outcomes for WLHIV in SSA [30]. Barriers such as long distances to clinics, transportation costs, understaffing, provider stigma, and strict clinic schedules were consistently identified as obstacles to retention in care [6]. In response to these issues, emerging evidence emphasizes the role of digital health interventions, like mobile phone–based reminders in enhancing adherence and engagement in care [31]. Similarly, evidence from Nigeria showed that mHealth reminder systems improved usability, patient satisfaction, and continuity of care among WLHIV [32].

Women who had negative experiences with healthcare providers were discouraged from attending follow-up visits, leading to a loss of trust in health systems [28].

Social Support and Community Networks

Strong social support was identified as one of the most protective factors affecting health outcomes among WLHIV [17, 24]. Partner, family, friends, and community relationships were linked to either increased ART adherence, better mental health, resilience, and a higher quality of life, or the opposite [33].

Quality Assessment of Included Studies

Based on the JBI critical appraisal, 20 studies were rated as high quality and 3 rated as moderate quality, with none rated as low quality. Most cross-sectional studies were rated as moderate due to limitations in causal inference, while qualitative studies generally demonstrated strong methodological rigor. This is shown in Table 3.

Table 3. Critical Appraisal of Included Studies

S/N	Author (Year)	Study Design	JBI Tool Used	Score	Quality	Comments
1	Augustine et al. (2022)	Qualitative	JBI Qualitative Checklist	7/10	Moderate	Good focus on stigma; limited causality
2	Becker et al. (2020)	Qualitative	JBI Qualitative Checklist	8/10	High	Multi-level barriers were well captured
3	Azia et al. (2016)	Qualitative	JBI Qualitative Checklist	8/10	High	Strong contextual insight
4	Steinert et al. (2017)	Cross-sectional	JBI Analytical Cross-sectional	8/11	High	Good poverty-health linkage
5	Parcesepe et al. (2017)	Cohort	JBI Cohort Checklist	9/11	High	Strong mental health linkage
6	Mpofu & Ganga-Limando (2024a)	Qualitative	JBI Qualitative Checklist	9/10	High	Rich lived experiences
7	Sorkpor et al. (2025)	Cross-sectional	JBI Analytical Cross-sectional	8/10	High	Strong stigma-depression link
8	Yator et al. (2021)	Cross-sectional	JBI Analytical Cross-sectional	7/10	Moderate	Hospital-based limitation
9	Aloyce et al. (2020)	Cross-sectional	JBI Analytical Cross-sectional	8/10	High	IPV and disclosure are well explored
10	Onono et al. (2020)	Cross-sectional	JBI Analytical Cross-sectional	9/11	High	Strong linkage to adherence
11	Alhassan et al. (2022)	Qualitative	JBI Qualitative Checklist	8/10	High	Strong contextual depth
12	Pepper (2023)	Qualitative	JBI Qualitative Checklist	9/10	High	Community-led intervention insight
13	Mpofu & Ganga-Limando (2024b)	Qualitative	JBI Qualitative Checklist	9/10	High	Consistent with a similar study
14	Jia et al. (2025)	Cross-sectional	JBI Analytical Cross-sectional	7/10	Moderate	Localized findings
15	Young et al. (2024)	Cohort	JBI Cohort Checklist	9/11	High	Strong retention outcomes
16	Crusto et al. (2025)	Qualitative	JBI Qualitative Checklist	9/10	High	Innovative psychosocial support
17	Tizie et al. (2023)	Cross-sectional	JBI Analytical Cross-sectional	8/10	High	Technology & adherence relevance
18	Ezelote et al. (2025)	Qualitative	JBI Qualitative Checklist	9/10	High	Strong mHealth usability insight
19	Ameyaw et al. (2024)	Cross-sectional	JBI Analytical Cross-sectional	8/10	High	Social support is well analyzed
20	Christina et al. (2020)	Cross-sectional	JBI Analytical Cross-sectional	9/11	High	Strong psychosocial determinants
21	Seffren et al. (2018)	Cross-sectional	JBI Analytical Cross-sectional	8/10	High	Coping & mental health link
22	Laurenzi et al. (2022)	Qualitative	JBI Qualitative Checklist	9/10	High	Strong intervention adaptation

S/N	Author (Year)	Study Design	JBI Tool Used	Score	Quality	Comments
23	Odimegwu et al., 2018	Qualitative	JBI Qualitative Checklist	8/8	High	Strong stigma and discrimination

Summary of Key Findings

In summary, the findings show that complex relationships among economic, cultural, and structural factors influenced the health outcomes of WLHIV in SSA. No single determinant acted alone; instead, the combined and interactive effects of poverty, stigma, gender inequality, IPV, access to healthcare, and social support contributed to various health outcomes.

Discussion

This review builds a multilevel understanding of how social determinants affect health outcomes among WLHIV in SSA. The synthesis reveals that HIV-related outcomes are not only influenced by biomedical access but are also profoundly impacted by structural inequalities, gendered power dynamics, and widespread stigma that delay care engagement and disrupt treatment continuity. Importantly, these risks do not occur in isolation; instead, they reinforce each other, resulting in cumulative disadvantages across the HIV care continuum. To better understand the relative significance of these determinants, Table 4 offers a hierarchical mapping of key social factors influencing health outcomes among WLHIV.

Table 4. Relative Influence of Social Determinants on Health Outcomes among WLHIV in SSA, aligned with the SDH and Socio-Ecological Model (Adapted by the Authors)

Level (SDH–SEM)	Social Determinant	Relative Influence	Impact on Health Outcomes	Key Supporting Studies
Structural-Level Determinants (Upstream Factors)	HIV-related stigma (cross-cutting)	Very High	Depression, poor ART adherence, delayed initiation, reduced viral suppression, low QoL	Augustine et al. (2022); Sorkpor et al. (2025); Yator et al. (2021); Onono et al. (2020); Christina et al. (2020); Jia et al. (2025); Odimegwu et al. (2018)
	Socioeconomic status (poverty, unemployment, food insecurity)	Very High	Poor adherence, missed clinic visits, disease severity, low retention	Becker et al. (2020); Steinert et al. (2017); Alhassan et al. (2022); Pepper (2023); Young et al. (2024)
	Gender norms & low decision-making power	High	Reduced autonomy, non-adherence, psychological distress, poor care engagement	Parcesepe et al. (2017); Augustine et al. (2022); Jia et al. (2025)
	Healthcare access barriers (cost, distance, provider attitudes)	High	Delayed ART initiation, poor retention, reduced service utilization	Becker et al. (2020); Alhassan et al. (2022); Jia et al. (2025)
	Digital access (mHealth as emerging structural factor)	Moderate (Emerging)	Improved adherence and engagement; constrained by access inequities	Tizie et al. (2023); Ezelote et al. (2025)
Community-Level Determinants (Social Environment & Norms)	Stigma & discrimination (community-level expression)	Very High	Social exclusion, fear of disclosure, poor mental health, and delayed care	Azia et al. (2016); Mpofu & Ganga-Limando (2024a); Odimegwu et al. (2018)
	Cultural and religious influences	Moderate–High (Context-dependent)	Dual effect: stigma and delayed care vs. resilience and coping support	Mpofu & Ganga-Limando (2024b); Laurenzi et al. (2022)
	Social support & community networks	High (Protective)	Improved adherence, mental health, resilience, retention in care	Seffren et al. (2018); Laurenzi et al. (2022); Crusto et al. (2025); Christina et al. (2020)
Interpersonal-Level Determinants	Intimate partner violence	High	Non-adherence, missed visits, depression, unsafe disclosure, poor viral suppression.	Aloyce et al. (2020); Onono et al. (2020)

Level (SDH–SEM)	Social Determinant	Relative Influence	Impact on Health Outcomes	Key Supporting Studies
(Immediate Social Relations)	Mental health (depression, psychological distress)	High (Mediating factor)	Reduced adherence, poor viral suppression, and disengagement from care	Sorkpor et al. (2025); Yator et al. (2021); Christina et al. (2020)

Table 4 summarized the influence of key social determinants across the included studies, emphasizing HIV-related stigma as the most common and consistently reported factor, followed by poverty and gender inequality. These determinants work through interconnected psychosocial and structural pathways to affect adherence, mental health, and retention in care. This hierarchy provides a clear framework for understanding the multilevel dynamics discussed in the following sections. This categorization supports the integrated SDH–SEM framework (Figure 1), illustrating how structural, community, and interpersonal determinants interact to create cumulative effects on health outcomes.

Structural-Level Determinants (SDH: Upstream Factors)

Socioeconomic Status and Gender Norms

Women with low socioeconomic status (SES), such as unemployment, poverty, lack of transportation for clinic visits, and food insecurity, often encounter barriers that hinder adherence. These SES factors are consistently associated with poorer ART adherence, missed clinic visits, lower retention rates, and worse health outcomes [19]. According to Steinert et al. (2017), there is a positive correlation between poverty and the severity of HIV-related illness, with stronger effects observed in rural areas [18]. In a study by Becker et al. (2020) among rural women in Eswatini living with HIV, lack of food, unemployment, and limited financial resources were identified as key barriers to ART adherence [6].

Gender norms further intensified these socioeconomic risks. The power imbalance between men and women in many African societies means that many women cannot make decisions about their own health. Some of the gender inequalities that contribute to the HIV epidemic include gender-based violence (GBV), child marriage, female genital mutilation, inequalities in power and decision-making, women's lack of economic empowerment, girls' limited access to education, legal and political issues such as discriminatory laws, stigma, discrimination, and humanitarian crises as cross-cutting factors. There was a positive link between low decision-making power and HIV seropositivity among women in SSA. As treatment access and life expectancy for HIV-positive individuals improve, it becomes increasingly important to focus on the mental health and well-being of HIV-positive women [21].

Access to Healthcare Services (including Digital Technology)

Access to healthcare was a vital factor affecting the health outcomes of WLHIV. It served as a cross-cutting determinant impacting multiple levels of the socio-ecological model. Structurally, barriers like cost, distance, and health system limitations impeded service availability [13, 30]. Many women faced harmful health outcomes because of these barriers.

E-health technologies and mobile reminder systems showed promise in bridging access gaps. Evidence from the region indicates that digital health programs, including medication refills and appointment reminders via SMS notifications and tele-counseling, have successfully improved ART adherence and retention, reducing the need for in-person clinic visits. However, this promising approach is often limited by social inequalities such as low socioeconomic status, location (rural versus urban), and education level [33]. Lack of access to a mobile phone and poor internet connectivity in resource-limited settings are significant barriers [31]. More inclusive e-health solutions, tailored to women's economic realities, should be promoted to broaden access to services [32].

Community-Level Determinants (Social Environment & Norms)

Stigma and Discrimination

HIV-related stigma and gender discrimination against WLHIV are important psychosocial and public health issues that influence health and well-being [4]. HIV stigma affects the health and mental health of WLHIV in many ways. The stigma of being HIV positive shapes their attitudes toward early diagnosis, disclosing HIV status, starting and adhering to ART, and quality of life. It also hinders their ability to fulfill social roles and hampers their efforts to prevent transmission to others. The diagnosis often leads to internalized or self-stigma, which lowers women's motivation to cope [25].

A study in Ghana among postpartum WLHIV showed that internalized HIV stigma significantly mediated the effects of both experienced and anticipated stigma, leading to increased depression, lower ART adherence, and reduced quality of life.

Internalized stigma was identified as a key psychological mechanism connecting social adversity to poor mental health in this population [22]. Mental health issues, especially depression and anxiety were common among women and young girls living with HIV/AIDS, particularly in low- and middle-income (LMICs) countries, where women face heightened vulnerability to psychiatric symptoms due to intersecting stressors like stigma and IPV. Factors predicting mental health outcomes include IPV, stigma, childhood trauma, sexual abuse, poverty, unemployment, and social isolation. Mental illness negatively impacts viral suppression rates among WLHIV, leading to increased mortality [23].

Augustine et al. (2022) reported that HIV stigma and gender discrimination disproportionately affected women in North Central Nigeria. Women described experiencing stigma related to gendered perceptions of HIV, including negative moral judgments and challenges in gaining acceptance within communities and healthcare settings [4]. Evidence linking stigma to negative mental health outcomes and lower ART adherence was strong and consistent across different environments, with multiple studies identifying internalized stigma as a key mediating factor.

Cultural and Religious Influences

Cultural and religious systems impact the health outcomes of WLHIV in SSA through two main pathways. On one hand, these systems increase stigma, restrict autonomy, reduce disclosure, and hinder treatment adherence. On the other hand, they serve as vital sources of emotional support, social belonging, resilience, and coping. Cultural beliefs and religious teachings about sexuality, marriage, and morality often depict HIV diagnosis as a moral failure or a curse, which can significantly contribute to internalized stigma and delays in seeking care [14, 25]. These experiences lead to high levels of fear about disclosing HIV status, rejection by the community, and severe self-stigma, all of which negatively affect health-seeking behaviours, initiation of ART, and retention in care [28]. In regions where a woman's reproductive ability is seen as her worth or where sexual purity is presumed, an HIV diagnosis can lead to serious social ostracization [20].

However, religious and cultural institutions often serve as the most accessible and influential community structures for women to cope with challenges. Many faith-based organizations (FBOs) offer spiritual and emotional support to their members. They provide peer support groups, financial assistance, and shared meeting spaces where members gather to exchange support, thereby boosting resilience and mental health outcomes [20]. Evidence indicates that effectively integrating WLHIV into these spiritual environments can significantly improve their health outcomes. Overall, culture and religion shape how WLHIV view their diagnosis, handle disclosure, and access HIV services. These influences can either strengthen resilience or contribute to feelings of marginalization.

Interpersonal-Level Determinants (Immediate Social Relations)

Intimate Partner Violence (IPV)

IPV was found to have strong and consistent association with various HIV-related health outcomes. In a study by Aloyce et al. (2020), IPV prevalence was high after HIV status disclosure. The study found that 85.3% of women who revealed their HIV status to their partners experienced IPV [26]. Additionally, IPV was identified as a risk factor for new HIV infections because many women face sexual violence, such as forced sex or rape, or are coerced into unsafe sex, which prevents them from negotiating safe sex practices with their partners. Another study by Onono et al. (2020) indicates that women experiencing IPV are more likely to miss clinic visits, have difficulty taking ART medications, and fail to adhere to prescribed treatments [27]. IPV was also shown to interact synergistically with stigma and mental health issues, further increasing risks.

Social Support and Community Networks

Social support consistently shows a protective link across studies. It has a positive effect, associated with increased adherence, better mental health, and higher retention in care. It has been demonstrated to reduce symptoms of depression and anxiety and to improve coping strategies. Support from families and sexual partners encouraged disclosure and helped keep patients engaged in care, as noted by Ameyaw et al. (2024) [17]. Community-led participatory interventions significantly increased treatment engagement among postpartum WLHIV. Strong social networks within families and communities were essential for protecting patients from stigma, loneliness, and economic hardship. These networks also enhanced mental health and support medication adherence [16, 24].

A study by Laurenzi et al. (2022) in four African countries namely, Malawi, Tanzania, Uganda, and Zambia, showed that models involving support networks run by WLHIV are highly effective in HIV treatment and support services. It promotes empowerment and encourages them to live with the virus with dignity instead of being intimidated by it. It also turns passive adherence into active engagement in treatment and improving health outcomes. It fosters resilience and supports safe disclosure, enhancing quality of life and lifelong treatment management among WLHIV [29. Women who participated in support groups reported feeling less isolated, more confident in managing their health, and experiencing better treatment outcomes. Social support served as a vital buffer against stigma, poverty, and psychological distress.

Integrated Multi-Level Interpretation

At the community level, stigma and negative provider attitudes decreased service acceptability and trust. Interpersonally, gender dynamics and patient–provider relationships further affected women's ability to access care. This multi-layered interaction revealed that access is influenced not only by service availability but also by social factors. The findings demonstrate that social determinants do not act alone but interact across structural, community, and interpersonal levels to create cumulative disadvantages. Structural barriers such as poverty and limited healthcare infrastructure intersect with community stigma and power dynamics within relationships to restrict women's access and engagement with care. Figure 3 illustrates how social factors work together to influence health outcomes among WLHIV in SSA.

Strengths and Limitations of the Review

This systematic review has several methodological strengths. It provides a comprehensive synthesis of recent evidence across various SSA settings, and utilized multiple theoretical frameworks to enhance interpretation. The review covered qualitative, quantitative, and mixed-methods studies, offering well-rounded insights into the socio-ecological processes affecting health outcomes. However, some limitations exist. Differences in sampling methods across studies, with many using facility-based and convenience samples, could introduce selection bias. Small sample sizes in some qualitative research also limited the range of perspectives, reducing overall generalizability. The predominance of cross-sectional and qualitative studies restricts the ability to establish causality. Additionally, limiting inclusion to studies published in English may have excluded relevant research and potentially introduced language bias.

Figure 3. Socio-ecological pathways linking intersecting social determinants to health outcomes among women living with HIV in SSA

This figure illustrates how intersecting social determinants at structural, community, and interpersonal levels affect HIV outcomes among WLHIV. It highlights how inequality, stigma, and violence hinder engagement in care, while social support and community networks foster resilience, improve adherence, and enhance mental health through cumulative, context-specific interactions.

Conclusion

This systematic review analyzed data from 23 studies published between January 2015 and November 2025, demonstrating that social determinants play a key role in shaping HIV-related health outcomes among WLHIV in SSA. In various settings, socioeconomic disadvantages such as poverty, food insecurity, unemployment, and limited education interacted with gender inequality, stigma, IPV, and restrictive cultural and religious beliefs to affect women's HIV care journeys. These factors were consistently linked to delays in HIV testing, poor ART initiation, and poor adherence. They were also connected to weak retention in care, low viral suppression, and mental health issues. Conversely, supportive social environments, including peer and social support, family involvement, positive community and faith-based initiatives, were linked to better health-seeking behaviours, adherence, and mental well-being. Despite differences in study designs, the results remained consistent across diverse settings, reinforcing the credibility of the findings.

Implications for Public Health, Policy, and Gender Equity

The results highlight the shortcomings of HIV programs, which focus on biomedical advances without addressing the social and gender realities of women's lives. Issues such as gender inequality, stigma, and socioeconomic disadvantages deeply weaken the effectiveness of otherwise good clinical interventions. Public health strategies should therefore broaden their focus from merely providing treatment to adopting integrated, gender-transformative approaches that enhance women's autonomy, safety, and economic security. Effective actions include embedding social protections, strengthening legal policies against gender-based violence, reducing stigma within health systems, and ensuring equal access to respectful, women-centered care. From a gender perspective, tackling household power imbalances and structural exclusion is a vital step toward achieving sustainable HIV outcomes among WLHIV in SSA.

Recommendations for Practice, Policy, and Research

Appropriate responses should emphasize community-based and differentiated care models, encourage positive engagement with religious organizations, incorporate mental health and IPV services into care, and develop digital health solutions that proactively address digital exclusion. Policymakers should expand social protection programs, enforce gender-sensitive laws, invest in reducing stigma, and train healthcare providers. Future research should evaluate gender-transformative interventions with robust mixed-methods designs, increase geographic and linguistic diversity, and assess the long-term health and socioeconomic impacts of integrated social and clinical strategies.

To achieve optimal and equitable health outcomes for women living with HIV in SSA, relevant stakeholders should focus on interventions that tackle the structural and social barriers that uphold inequality. Gender-transformative HIV programs, enhanced healthcare access, and community empowerment should be seen as essential parts of the HIV response.

Supplementary Materials

Supplementary file available via: https://www.journalehdi.com/suppfile/747/Ehdi039-Supplementary-Material-.pdf

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