

# AIDS in Women Caused by Human Immunodeficiency Virus: A Comprehensive Review

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## ABSTRACT

HIV/AIDS remains a significant global health challenge, disproportionately affecting women, especially in resource-limited regions like sub-Saharan Africa. This comprehensive review explores the complex factors contributing to the feminization of the HIV/AIDS epidemic, focusing on biological, social, cultural, and economic vulnerabilities that heighten women's risk of infection. Biological factors such as increased mucosal susceptibility, along with gender-based violence, economic dependency, and restrictive cultural norms, compound women's vulnerability. Prevention and treatment strategies, including condom use, Pre-exposure Prophylaxis (PrEP), and mother-to-child transmission prevention (PMTCT), are examined alongside structural barriers that limit their efficacy. The review also highlights the importance of integrating HIV services with sexual and reproductive health, addressing the root causes of gender inequality, and expanding research to include gender-sensitive approaches. By empowering women economically, socially, and legally, tailored interventions can mitigate the impact of HIV/AIDS and improve health outcomes for women worldwide.

**Keywords:** HIV/AIDS, women, feminization of HIV, gender-based violence, PrEP, PMTCT, sexual and reproductive health, sub-Saharan Africa.

## INTRODUCTION

HIV/AIDS remains a significant global public health issue, with an estimated 38 million people living with HIV worldwide as of 2020. Of this population, more than half are women, reflecting the disproportionate burden the epidemic places on females, especially in resource-limited regions like sub-Saharan Africa [1]. The feminization of the HIV/AIDS epidemic has become increasingly evident due to the unique biological, social, economic, and cultural vulnerabilities that women face [2]. These factors not only heighten the risk of HIV transmission but also hinder access to healthcare, leading to disparities in treatment outcomes [3].

This comprehensive review explores the epidemiology of HIV/AIDS among women, the mechanisms driving these disproportionate effects, and the strategies to mitigate these impacts. Additionally, it identifies research gaps and challenges in effectively preventing and managing HIV/AIDS in women.

### Epidemiology of HIV/AIDS in Women

HIV/AIDS prevalence among women has steadily increased over the years, particularly in sub-Saharan Africa, which accounts for the highest number of infections. In some regions, young women are more

than twice as likely to be infected with HIV compared to their male counterparts [3]. Various epidemiological studies highlight several factors contributing to the feminization of the epidemic, including poverty, limited access to education, gender-based violence, and inadequate healthcare services [4].

### Key Points

**Regional Disparities:** Sub-Saharan Africa carries a disproportionate burden of HIV, with young women being especially vulnerable.

**Age and Gender Disparities:** Adolescent girls and young women (15-24 years) represent a significant portion of new infections, mainly due to socioeconomic vulnerabilities and lack of access to sexual health education and services [5].

**Intersection with Pregnancy:** HIV transmission rates are elevated among pregnant women due to biological factors and insufficient prenatal care, highlighting the importance of mother-to-child transmission prevention programs [6].

### Mechanisms of Disproportionate Impact on Women

Women's vulnerability to HIV infection is influenced by several mechanisms, including biological, sociocultural, and economic factors.

### Biological Factors

**Increased Susceptibility:** Women are more biologically susceptible to HIV during heterosexual intercourse due to a larger mucosal surface area in the female genital tract, where the virus can enter [7].

**Sexually Transmitted Infections (STIs):** Co-infections with STIs further increase the risk of HIV transmission in women by compromising mucosal barriers [8].

### Social and Economic Factors:

**Gender-Based Violence:** Intimate partner violence and sexual coercion increase the risk of HIV transmission, as women often lack the power to negotiate safe sex practices.

**Economic Dependency:** Women's economic vulnerability, often exacerbated by unemployment and lack of access to resources, may lead them to engage in transactional sex or remain in abusive relationships, further increasing their HIV risk [9].

**Cultural Norms:** In many societies, gender roles and expectations reduce women's autonomy over their sexual and reproductive health, limiting their ability to access HIV prevention services such as condoms, Pre-exposure Prophylaxis (PrEP), and HIV testing.

### Prevention Strategies for HIV/AIDS in Women

To address the disproportionate impact of HIV on women, comprehensive prevention strategies are essential [10]. These approaches should integrate both biomedical and sociocultural interventions.

#### Biomedical Interventions:

**Condom Use:** Consistent condom use remains a cornerstone of HIV prevention [11]. However, women's ability to negotiate condom use may be limited by power dynamics within relationships.

**Pre-exposure Prophylaxis (PrEP):** PrEP has shown efficacy in preventing HIV transmission among high-risk women. Increasing access and

This comprehensive review has highlighted the complex interplay of biological, social, cultural, and economic factors that contribute to the disproportionate impact of HIV/AIDS on women, particularly in resource-limited settings such as sub-Saharan Africa. Women face heightened vulnerabilities due to biological factors, gender-based violence, economic dependency, and cultural norms that limit their sexual autonomy and access to healthcare. Despite the progress in biomedical interventions like Pre-exposure Prophylaxis (PrEP), antiretroviral therapy (ART), and mother-to-child transmission prevention programs, structural challenges persist, limiting the efficacy of these interventions. To effectively reduce the burden of HIV/AIDS among women, prevention strategies must go beyond biomedical approaches to address the root causes of gender inequality and empower

awareness of PrEP, especially in sub-Saharan Africa, is a key prevention strategy [12].

**Mother-to-Child Transmission Prevention (MTCT):** The expansion of antenatal care services that include HIV testing, counseling, and antiretroviral therapy (ART) has significantly reduced the transmission of HIV from mother to child [13].

#### Sociocultural Interventions:

**Empowerment Programs:** Programs aimed at empowering women through education, economic opportunities, and legal reforms can reduce their vulnerability to HIV by addressing the root causes of gender inequality [14].

**Sexual and Reproductive Health Education:** Comprehensive sexual health education targeting young women and adolescent girls is crucial for reducing new infections and promoting safer sexual behaviors.

#### Challenges and Research Gaps

Despite significant progress in the fight against HIV/AIDS, numerous challenges and research gaps remain, particularly concerning women's experiences and needs [15].

**Limited Access to Healthcare:** Structural barriers, including inadequate healthcare infrastructure, stigma, and discrimination, continue to limit women's access to HIV testing and treatment, particularly in rural areas.

**Gendered Research Gaps:** Research on HIV/AIDS often lacks a gendered perspective, leaving critical gaps in understanding how biological, social, and behavioral factors specifically affect women's health outcomes [16].

**Mental Health and HIV:** The psychological impact of living with HIV is often underexplored, especially for women who may face additional stressors, such as caring for children or enduring stigma from their communities [17].

## CONCLUSION

women economically, socially, and legally. This includes expanding access to education, enhancing healthcare infrastructure, and tackling the stigma and discrimination that often hinder women from seeking HIV testing and treatment. Additionally, future research must adopt a gender-sensitive lens, focusing on the long-term health outcomes for women living with HIV, the intersection of gender-based violence and HIV, and the socio-economic impacts of the epidemic on women. By integrating HIV services with broader sexual and reproductive health initiatives, and addressing both structural and individual factors, the global response to HIV/AIDS can more effectively mitigate its impact on women. Tailored interventions, particularly in rural and underserved areas, will be crucial in reducing new infections and improving the quality of life for women living with HIV/AIDS. As we move

forward, the inclusion of women's voices in policy development, research, and advocacy will be

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essential in ensuring equitable and sustainable progress in the fight against HIV/AIDS.

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