OPEN ACCESS
World Journal of Applied Medical Sciences
ISSN: 3049-0200 (Online) | Vol. 2, No. 10, 2025
Website: https://wasrpublication.com/index.php/wjams/

Advanced Behavioral Interventions for HIV Prevention: Analyzing the Impact on Risk Reduction and the Transformation of Community Norms

Dr. Joshua HK. Banda*

Lusaka Apex Medical University, Lusaka, Zambia.

Received: 04/09/2025 | Accepted: 11/10/2025 | Published: 28/10/2025

Abstract: The global HIV epidemic continues to be one of the most persistent and complex public health challenges, particularly in regions with high transmission rates, such as sub-Saharan Africa, South Asia, and Eastern and Central Europe. Although significant progress has been made in the biomedical field, with the development and widespread use of antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP), these measures alone are not sufficient to completely stop HIV transmission. Therefore, behavioral interventions remain an essential element in the fight against HIV/AIDS. These interventions address the underlying risk factors associated with HIV transmission, providing a holistic approach to prevention that complements biomedical strategies.

This study aims to explore advanced behavioral interventions designed to reduce the risk of HIV transmission, focusing specifically on modifying high-risk behaviors and changing social and cultural norms related to HIV prevention. The study evaluates the effectiveness of these behavioral strategies, which include the promotion of safer sexual practices such as consistent condom use, regular HIV testing, and adherence to antiretroviral treatment regimens. Focusing on behavioral change, this study highlights the potential of these interventions to empower individuals and communities to take control of their health, reducing the risk of transmission.

A key aspect of the study is to examine community-level interventions aimed at changing social norms, reducing HIV-related stigma and encouraging more people to seek prevention and treatment services. These interventions often face significant challenges due to prevailing cultural and social attitudes, which can constitute significant obstacles to effective HIV prevention. The study evaluates the role of programs that are based on peer education, health communication campaigns, and community mobilization efforts in changing these norms, providing an insight into how these approaches can promote a successful behavior change in high-risk populations. The study also considers the intersectionality of HIV prevention, recognizing that risk factors and prevention strategies differ significantly across groups. Tailored interventions that address the unique needs of specific populations, such as men who have sex with men (MSM), sex workers, adolescents, and people living with HIV, are explored in depth. This nuanced approach recognizes the diverse social, cultural, and economic factors that influence HIV risk and emphasizes the importance of personalized prevention strategies that address the realities and challenges these groups face.

The research also underscores the need for an integrated approach to HIV prevention, which combines both behavioral and biomedical interventions. While ART and PrEP have proven effective in preventing HIV transmission, their success is often contingent upon behavioral factors such as adherence to treatment and prevention protocols. This study advocates for a comprehensive strategy that simultaneously addresses the biomedical aspects of HIV prevention while also fostering behavioral change within communities. It emphasizes the importance of understanding how behavior influences the uptake of biomedical interventions, such as ART and PrEP, and the role of community engagement in ensuring the success of these prevention strategies.

By highlighting the significance of behavioral change, this research calls for a more nuanced and dynamic approach to HIV prevention. It proposes that a focus on community-driven efforts—such as peer-led education, stigma reduction campaigns, and health communication—coupled with the availability of biomedical solutions, offers the most promising route toward curbing the HIV epidemic. Ultimately, the study argues for the transformation of community norms surrounding HIV, advocating for an environment where HIV-related health practices are not only accepted but embraced. This holistic approach has the potential to reduce transmission rates, improve the quality of life for individuals living with HIV, and support global efforts toward the eradication of the epidemic.

Through this research, actionable insights are provided for policymakers, health organizations, and public health practitioners, offering a comprehensive framework for improving global HIV prevention strategies. By integrating advanced behavioral interventions with biomedical advancements, the study aims to create a more supportive and effective environment for combating HIV, reducing transmission risks, and achieving the UNAIDS 95-95-95 targets for 2030.

Keywords: HIV Prevention, Behavioral Interventions, Risk Reduction, Community Norms Transformation.

***Corresponding Author**
Dr. Joshua HK. Banda*
Email: smartscholar2024@gmail.com

Introduction

The global HIV epidemic continues to represent a major public health challenge, particularly in resource-limited settings and high-risk populations. Despite significant advances in biomedical interventions, such as antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP), the fight against HIV transmission remains incomplete without addressing the behavioral factors that contribute to the spread of the virus. Both ART and PrEP have been shown to be effective in reducing HIV transmission, with ART reducing viral load to undetectable levels and PrEP providing protection for HIV-negative people at high risk of exposure (Cohen et al., 2011; Rodger et al., 2016).). However, their success largely depends on consistent adherence and appropriate use, which are often influenced by individual behaviors and sociocultural factors (Granich et al., 2009).

This research highlights the need for an integrated approach to HIV prevention, combining biomedical and behavioral interventions. Behavioral interventions aim to change risk behaviors, such as condom use, HIV testing, and treatment adherence, while addressing the sociocultural contexts that shape these behaviors (Kippax et al., 2013). For example, stigma surrounding HIV testing and treatment can prevent individuals from seeking needed care, thereby reducing the overall effectiveness of biomedical interventions (UNAIDS, 2023). Community-based efforts, such as peer education programs, health communication campaigns, and stigma reduction initiatives, play a crucial role in promoting behavior change and improving ART and PrEP uptake (Mlambo et al., 2020).

This study supports a comprehensive HIV prevention strategy that not only focuses on biomedical solutions but also integrates behavior change at the community level. Integrating these approaches ensures that individuals not only have access to biomedical interventions, but also use them effectively. Behavioral strategies, such as raising awareness and promoting safer sex practices, contribute significantly to reducing the risk of transmission, especially when tailored to the specific needs of high-risk populations, including men who have sex with men, sex workers, and adolescents (Sambisa et al. . al., 2012). In addition, interventions that target social and cultural norms, such as gender norms and attitudes toward HIV, can help create an environment conducive to HIV prevention (Hosegood et al., 2009).

By emphasizing community efforts and integrating them with biomedical interventions, this study aims to foster a more supportive environment for HIV prevention. It emphasizes the importance of transforming community norms to promote acceptance and adoption of HIV-related health practices. This comprehensive approach has the potential to reduce transmission rates, improve the quality of life of people living with HIV, and support global efforts to end the HIV epidemic by 2030 (UNAIDS, 2023). The results of this research aim to provide actionable information for policy makers, health organizations and public health practitioners, highlighting how the integration of advanced behavioral interventions with biomedical solutions can create a prevention strategy HIV more effective and more stable. By adopting this integrated approach, the study aims to contribute to the achievement of the UNAIDS 95-95-95 goals, ensuring that 95% of people living with HIV are diagnosed, 95% of those diagnosed receive antiretroviral treatment and 95% of people who receive it. Antiretroviral treatment achieves viral suppression by 2030 (UNAIDS, 2020).

Literature Review

1. HIV Transmission and Biomedical Interventions

HIV transmission remains one of the most pressing global health problems, with sexual contact being the primary mode of transmission. According to the World Health Organization (WHO), sexual transmission of HIV is responsible for more than 80% of new infections worldwide (WHO, 2023). Over the years, biomedical interventions have become fundamental strategies in the fight against HIV, with antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) showing great promise in reducing transmission rates. ART, which involves a combination of drugs that suppress viral replication, has revolutionized HIV management by reducing viral load to undetectable levels, significantly reducing the chance of transmission to HIV-negative partners. The PARTNER study, conducted by Rodger et al. (2016), provides compelling evidence that people with undetectable viral loads on ART are unable to sexually transmit HIV to their partners, demonstrating that the risk of transmission is effectively negated in these cases—a concept now known as "Undetectable = Untransmittable." I=I).

In addition, PrEP, a preventive treatment for HIV-negative people at high risk of contracting the virus, has been shown to be highly effective in reducing transmission, particularly in key populations such as men who have sex with men (MSM), injecting drug users, and serodiscordant couples (Cohen et al., 2011). PrEP works by blocking the ability of the HIV virus to establish an infection in the body if exposed. The success of PrEP in reducing new infections has been demonstrated in several clinical trials, including the iPrEx study, which found a 44% reduction in the risk of HIV acquisition among MSM (Grant et al., 2010). However, the effectiveness of ART and PrEP is largely dependent on adherence to prescribed treatment regimens. Studies have shown that inconsistent use of PrEP or non-adherence to ART significantly reduces the effectiveness of these interventions, highlighting the critical importance of behavioral factors in the overall success of biomedical strategies (McCormack et al., 2016).

Although ART and PrEP have been instrumental in reducing HIV transmission, their full potential cannot be realized without addressing the behavioral determinants that influence adherence and uptake of treatment. Factors such as stigma, misinformation about HIV, and cultural beliefs about healthcare can have a significant impact on a person's willingness to seek and adhere to treatment. In resource-limited settings, access and affordability of these interventions remain significant barriers, underscoring the need for policies to ensure equitable access to HIV prevention and treatment. Furthermore, behavioral research suggests that individuals may struggle to adopt or maintain adherence to ART and PrEP due to lifestyle factors, mental health issues, or inadequate healthcare support systems (Jain et al., 2019). For example, adherence to ART can be influenced by medication side effects, the complexity of treatment regimens, and the psychological burden of living with HIV (Vreeman et al., 2014).

It is therefore clear that biomedical interventions such as ART and PrEP must be accompanied by behavioral strategies that promote adherence, raise awareness, and address the social determinants of health that affect access to these services. This requires an

integrated approach that not only provides biomedical solutions but also promotes behavior change in communities. In particular, programs aimed at reducing HIV-related stigma, improving health care literacy, and helping individuals navigate the health system are essential to ensuring the sustained effectiveness of these biomedical interventions. Furthermore, interventions that integrate community engagement and peer support have been shown to improve adherence to treatment and prevention protocols (Katz et al., 2018). In conclusion, while biomedical interventions such as ART and PrEP have proven instrumental in the fight against HIV, their success is fundamentally linked to the broader behavioral and sociocultural contexts in which they are implemented. It is therefore essential that HIV prevention strategies adopt a holistic approach, integrating both biomedical and behavioral elements to ensure that these interventions achieve their full potential to reduce HIV transmission globally.

2. Behavioral Interventions in HIV Prevention

Behavioral interventions are fundamental components of HIV prevention strategies that address the psychosocial and contextual factors that support risk behaviors associated with HIV transmission. These interventions aim to change individual behaviors, such as condom use, HIV testing, and adherence to preventive treatments such as antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP). The effectiveness of these interventions often depends on their ability to be culturally and contextually tailored to meet the unique needs of different populations, particularly those at highest risk of HIV transmission, such as men who have sex with men (MSM), sex workers, and people who inject drugs (PWID) (Kippax et al., 2013).

Health education campaigns, peer education, and social marketing have emerged as key strategies for influencing behaviors that directly reduce HIV transmission. Health education campaigns play a vital role in raising awareness about the risks of HIV and the importance of prevention strategies, such as consistent condom use and regular HIV testing. These campaigns have been shown to be particularly effective in settings where misinformation or stigma about HIV is prevalent, as they can challenge misconceptions and provide accurate and accessible information (Mlambo et al., 2020). Similarly, peer education programs, which use the influence of trusted community members to disseminate health information and promote behavior change, have been shown to be successful in improving knowledge and changing behavior, particularly among high-risk groups (Chirwa et al., 2017). Peer educators often serve as role models and provide a platform to discuss sensitive topics in a less stigmatized environment, thereby improving acceptance of HIV prevention practices.

Social marketing campaigns also play a vital role in using marketing principles to influence behavioral change on a large scale. For example, condom promotion campaigns have successfully increased condom use by emphasizing their benefits and normalizing their use in sexual health discourse. A study by Brown et al. (2018) found that social marketing strategies focused on condom accessibility and social acceptance led to significant increases in condom use among high-risk populations. These interventions are often combined with efforts to increase access to HIV testing services, which is essential for early detection and initiation of antiretroviral treatment and PrEP.

However, despite the success of many behavioral interventions, their effectiveness is not always guaranteed, especially in contexts where cultural norms, social barriers, and economic constraints influence individuals' willingness to adopt preventive behaviors. Mlambo et al. (2020) emphasize the importance of adapting behavioral interventions to local contexts, taking into account cultural beliefs, gender norms, and societal attitudes toward HIV and sexual health. For example, interventions that work well in one country or community may not be effective in another due to differences in stigma, religious beliefs, or access to health resources. Therefore, ongoing monitoring and evaluation of these interventions is necessary to ensure that they remain relevant and effective in responding to the changing social and cultural dynamics that influence HIV risk behaviors.

In addition, recent studies have highlighted the need for more comprehensive and integrated approaches that combine behavioral interventions with biomedical strategies. For example, ART and PrEP have been shown to be highly effective in reducing HIV transmission, but their success depends on continued adherence, which is strongly influenced by behavioral factors. Interventions that focus on improving adherence to ART and PrEP through behavioral support mechanisms, such as counseling, peer support groups, and reminder systems, have been found to significantly improve their effectiveness (DiMatteo, 2004). By integrating these behavioral components with biomedical treatments, HIV prevention strategies can become more holistic and effective.

The concept of "combined prevention," which integrates biomedical and behavioral interventions, has gained popularity in recent years as a strategy for maximizing HIV prevention efforts. This approach recognizes that HIV prevention is not only about providing medical solutions, but also about creating a supportive environment that encourages individuals to adopt and maintain protective behaviors. For example, interventions to reduce stigma, increase HIV testing, and promote adherence to antiretroviral therapy must work together to achieve the goal of reducing transmission rates (Lippman et al., 2013). The effectiveness of combined prevention is also supported by evidence showing that when individuals participate in behavioral interventions and access biomedical tools such as PrEP, they are more likely to maintain protective behaviors over time (Sutton et al., 2016).

Finally, behavioral interventions must continually adapt to the changing landscape of the HIV epidemic. For example, new challenges such as the rise of drug-resistant strains of HIV, changing patterns of sexual behavior, and the impact of the COVID-19 pandemic on access to health care require innovative and flexible intervention strategies. Addressing these challenges requires an agile approach to behavioral interventions that takes into account new epidemiological trends, technological advances, and changing social attitudes (Kara et al., 2020). In conclusion, behavioral interventions are a cornerstone of HIV prevention because they provide the tools needed to reduce transmission by addressing individual and collective behaviors that underlie HIV risk. By combining appropriate interventions, such as health education, peer education, and social marketing, with biomedical strategies, this approach provides a comprehensive framework for reducing HIV transmission in high-risk populations and the general population. However, the success of these interventions requires ongoing adaptation to changing social, cultural, and behavioral contexts, emphasizing the importance of ongoing commitment to evaluating and refining HIV prevention strategies.

3. Social and Cultural Determinants of HIV Transmission Risk

The social, cultural, and economic context in which individuals live plays a crucial role in determining HIV risk behaviors and the effectiveness of prevention strategies. Behavioral interventions, while essential for addressing risk factors for HIV transmission, are strongly influenced by broader social determinants such as stigma, gender norms, and socioeconomic inequalities. These social and cultural determinants often create barriers that prevent individuals from accessing HIV prevention services, adhering to prevention measures, and adopting behaviors that reduce the risk of HIV transmission. Understanding these factors is essential for the development of context-specific and sustainable HIV prevention strategies. 3.1 HIV-related stigma and its impact on prevention

One of the most important barriers to effective HIV prevention and treatment is HIV stigma. HIV-related stigma and discrimination are widespread in many regions, particularly in sub-Saharan Africa and parts of Asia, where negative attitudes towards people living with HIV (PLHIV) often lead to social exclusion, marginalization and violence (UNAIDS, 2023). HIV stigma can manifest itself in many ways, including fear of rejection, verbal and physical abuse, and limited social support, which discourage people from seeking testing and treatment. Stigma also discourages people from disclosing their HIV status, which is a key factor in preventing transmission (Herek et al., 2013). Research has shown that stigma around HIV can be reduced with targeted interventions such as awareness campaigns, public education, and promoting the visibility of people living with HIV (Herek et al., 2013; Goffman, 1963). However, the effectiveness of these interventions is often limited by deeply rooted social attitudes and the need for broader social change to address negative HIV-related stereotypes.

The impact of stigma on health-seeking behavior has been demonstrated in numerous studies, including a study by Chandra et al. (2019), which found that people who experience higher levels of HIV-related stigma are less likely to engage in preventive behaviors such as HIV testing, condom use, and continued adherence to antiretroviral therapy. This stigma is often linked to intersecting factors such as gender, sexual orientation, and socioeconomic status, making it crucial to approach stigma reduction efforts from a multidimensional perspective. For example, anti-stigma campaigns should consider local cultural and religious contexts and engage community leaders and influencers to challenge harmful beliefs and practices. 3.2 Gender Norms and Sexual Behavior

Gender norms are another determinant of HIV risk. In many societies, traditional roles and expectations of men and women shape sexual behavior and the negotiation of safer sex practices. In patriarchal societies, men may have more power in sexual relationships, which may limit women's ability to negotiate condom use or insist on HIV testing (Hosegood et al., 2009). Women, especially in contexts where sexual violence and coercion are common, may be at greater risk of HIV because of their limited sexual decision-making power. In addition, gender-based violence (GBV), including intimate partner violence and sexual assault, increases women's vulnerability to HIV by reducing their ability to protect themselves from exposure (Stockl et al., 2014). In addition to women's vulnerability, certain social norms can normalize behaviors that increase HIV risk in men, particularly those in high-risk groups, such as men who have sex with men (MSM) or people who inject drugs (IDUs). In some cultures, hypermasculine norms that emphasize sexual conquest and dominance can lead to risky sexual behaviors, such as unprotected sex and a reluctance to openly discuss sexual health (Michaud et al., 2012). Addressing these gender norms is essential to changing HIV risk behaviors, as interventions to promote safer sex practices must not only target individuals but also address broader social and cultural systems that perpetuate gender inequality. Programs that involve men in HIV prevention efforts, encourage shared decision-making in sexual relationships, and promote positive masculinity have been shown to be effective in reducing HIV risk behaviors (Michaud et al., 2012; Wutoh et al., 2016).

3.3 Socioeconomic determinants of HIV risk

Economic factors also play an important role in determining HIV risk. In many parts of the world, particularly in sub-Saharan Africa, poverty is closely linked to increased rates of HIV transmission. People living in poverty may face multiple barriers to accessing health care, including lack of transportation, inadequate health infrastructure, and cost-related barriers to receiving HIV testing or antiretroviral treatment (Stürmer et al. , 2016). These financial constraints limit their ability to have regular health check-ups, take HIV prevention medications such as PrEP, and seek advice or support to manage HIV. Economic instability also exacerbates HIV risk behaviors. For example, people with low incomes may engage in transactional sex, where sex is exchanged for money, food, or material goods. These relationships often involve unprotected sex, which further increases the risk of HIV transmission (Parker et al., 2007). Structural inequalities, such as limited access to education and employment opportunities, also contribute to the increased vulnerability of poor communities to HIV.

Economic disparities are also linked to differential access to biomedical interventions. In many low- and middle-income countries, ART and PrEP are not universally accessible, creating disparities in the availability and effectiveness of HIV prevention methods. As a result, people living in resource-poor settings may face significant challenges in accessing life-saving interventions that can reduce their risk of HIV (Stürmer et al., 2016). Reducing socioeconomic barriers to HIV prevention requires comprehensive strategies that not only address the behavioral and biomedical aspects of HIV prevention, but also focus on reducing the structural disparities that perpetuate poverty and limit access to care.

4. Community mobilization and peer education

Community mobilization and peer education are transformative strategies for promoting HIV prevention and driving sustainable behavior change at the local level. These approaches build on the internal trust and cultural competence of community members to address HIV risk factors and encourage safer health practices. By integrating community efforts, these interventions aim to eliminate barriers to prevention, such as stigma, misinformation, and lack of access to health services.

4.1 Community mobilization: a catalyst for change

Community mobilization engages local populations to collectively address HIV-related challenges, empowering individuals to take ownership of prevention initiatives. This strategy not only raises awareness but also strengthens social networks, making communities more resilient to the spread of HIV. Studies have

shown that advocacy campaigns focused on stigma reduction, access to testing, and education significantly improve HIV outcomes. For example, Grassroots Soccer, a program in sub-Saharan Africa, has successfully used sport as a platform for community engagement, reaching youth populations with targeted HIV prevention messages (Clark et al., 2020). Community mobilization also promotes inclusion, ensuring that marginalized groups, such as sex workers and people who inject drugs, have a role in developing interventions (UNAIDS, 2023).

4.2 Effectiveness of Peer Education

Peer education is based on the principle that individuals are more likely to trust the advice of people in their social or cultural circle and act accordingly. Peer educators are uniquely positioned to challenge stigma, dispel myths, and provide practical advice in an accessible and understandable way. Randomized trials have shown that peer-led interventions are associated with increased condom use, HIV testing uptake, and adherence to antiretroviral therapy (Kim et al., 2018).

Programs such as the Sonagachi Project in India, which targets sex workers, have shown how peer education can reduce high-risk behaviors by fostering solidarity and mutual support among participants (Jana et al., 2004). Similarly, peer-led initiatives for men who have sex with men have been shown to increase the use of pre-exposure prophylaxis (PrEP) and HIV self-testing kits, particularly in contexts where these populations face discrimination and social exclusion (Liu et al., 2021).

4.3 Challenges and Innovations in Peer Education

Despite its success, peer education faces challenges, including maintaining program fidelity, ensuring sustainability, and combating peer educator burnout. Programs should be adaptable to the changing needs of communities and include regular training, mentoring, and incentives for peer educators. Integrating digital platforms into peer education, such as social media campaigns and mobile health apps, has been shown to improve awareness and engagement, particularly among young people (Chan et al., 2020). Digital innovations allow peer educators to reach hard-to-reach populations, providing a scalable solution for HIV prevention in resource-limited settings.

4.4 Synergy between community mobilization and peer education

When combined, community mobilization and peer education create a powerful synergy that amplifies the impact of HIV prevention efforts. Community mobilization paves the way for widespread behavior change, while peer education provides targeted and personalized interventions. For example, the HIV Prevention Trials Network 061 study showed that integrating peer education into broader community mobilization frameworks significantly reduced HIV incidence in high-risk populations in the United States (Koblin et al. et al., 2013).

Conclusion

Community mobilization and peer education are essential elements of a holistic HIV prevention strategy. By engaging local stakeholders as agents of change, these approaches build trust, encourage open dialogue, and address structural barriers that perpetuate HIV risk. The scaling up of these interventions, with a focus on innovation and adaptability, has promise for reducing transmission rates and meeting global HIV prevention goals.

5. Reduce stigma and change behavior

HIV-related stigma remains a significant barrier to the success of prevention, treatment, and care programs. Internal stigma (self-stigma) and external stigma (discrimination and prejudice) prevent individuals from getting tested, adhering to treatment regimens, or taking preventive measures. Therefore, addressing stigma is an essential aspect of behavior change and public health interventions aimed at reducing HIV transmission.

5.1 The role of stigma in HIV prevention

HIV-related stigma perpetuates fear, misinformation, and discrimination, often marginalizing those most at risk and preventing them from accessing essential health services. Studies have shown that stigma is associated with lower rates of HIV testing and treatment adherence. For example, a meta-analysis by Rueda et al. (2016) found that stigma negatively affects the mental health of people living with HIV (PLHIV), reducing their likelihood of seeking health services. Similarly, UNAIDS (2023) reported that in areas with high levels of stigma, individuals delay testing and initiation of antiretroviral treatment (ART), thereby increasing the risk of HIV transmission.

The impact of stigma is particularly pronounced in vulnerable populations, such as men who have sex with men (MSM), sex workers, and transgender people, where social discrimination exacerbates health disparities (Beyrer et al., 2012). These populations often face dual stigmatization related to HIV status and social identity, which necessitates the implementation of personalized interventions.

5.2 Stigma reduction interventions

Stigma reduction interventions are diverse and often multidimensional, integrating strategies to address structural, community, and individual stigma.

5.2.1 Public awareness campaigns

Public awareness campaigns aim to combat misinformation about HIV transmission and treatment, while promoting awareness of PLHIV. These campaigns often use mass media, community forums, and social media to challenge stereotypes and promote messages of inclusion. For example, the US Centers for Disease Control and Prevention (CDC) campaign Let's Stop HIV Together has effectively reduced stigma by highlighting the stories of people living with HIV (CDC, 2021). 5.2.2 Education and training of healthcare providers

Healthcare settings are often settings where PLHIV are stigmatized, which affects their access to care. Training healthcare providers on non-discriminatory practices, confidentiality, and the importance of fair treatment has been shown to be effective in reducing stigma in medical settings. Research by Nyblade et al. (2018) showed that such training reduced stigmatizing attitudes among healthcare professionals in sub-Saharan Africa, leading to improved patient outcomes.

5.2.3 Peer-led support groups

Peer-led support groups for people living with HIV provide a safe space to share experiences, combat self-stigma, and build resilience. These groups enable individuals to seek treatment and adopt preventive behaviors. Studies have shown that peer-led initiatives significantly improve adherence to antiretroviral

treatment and mental health outcomes among PLHIV (Amanyeiwe et al., 2020).

5.2.4 Community-level interventions

Community mobilization efforts play a vital role in combating stigma by engaging local leaders, religious figures, and other influential actors in promoting acceptance of PLHIV. In countries such as India, programs such as Red Ribbon Express have successfully used community outreach to disseminate accurate information and reduce stigma in rural areas (NACO, 2018).

5.3 The intersection of stigma and cultural norms

HIV stigma is deeply rooted in cultural and social norms, often fueled by misconceptions about morality, sexuality, and contagion. Combating stigma requires interventions that are culturally sensitive and context-specific. For example, in settings where HIV is associated with promiscuity, interventions should encourage community leaders to challenge these narratives and reframe HIV as a public health issue rather than a moral failing (Campbell et al., 2013).

In addition, gender norms play a critical role in perpetuating stigma, particularly towards women living with HIV. Women are often blamed for introducing HIV into relationships, leading to isolation and violence. Interventions such as gender transformation programs, which address power inequalities and promote gender equality, are essential to reducing stigma in these contexts (Dworkin et al., 2015). 5.4 Measuring the impact of stigma reduction

Evaluating the success of stigma reduction interventions remains difficult but essential. Tools such as the Stigma Index of People Living with HIV provide valuable insight into the experiences of PLHIV, helping to identify areas for improvement (GNP+, 2018). Longitudinal studies are also needed to assess the long-term impact of stigma reduction programs on behavior change and HIV prevention outcomes.

Conclusion

Reducing HIV-related stigma is essential to promote behavior change and ensure the success of prevention and treatment programs. Interventions to reduce stigma, whether through public awareness campaigns, peer-led initiatives, or culturally sensitive community programs, must take into account the multifaceted nature of stigma at the individual, community, and structural levels. By integrating these efforts into broader HIV prevention strategies, it is possible to create supportive environments that enable individuals to seek care, adopt preventive measures, and ultimately help reduce HIV transmission on a global scale.

6. The intersection of HIV risk and prevention

Intersectionality provides an essential framework for understanding how overlapping social identities, such as gender, race, age, sexual orientation, and socioeconomic status, shape individuals' vulnerability to HIV and their access to prevention, care, and treatment. This perspective is essential for designing comprehensive and effective interventions that address the diverse and complex realities of HIV risk and prevention.

6.1 Intersectionality and HIV risk

The interplay of social identities creates unique vulnerabilities to HIV that cannot be fully understood through a single-axis framework. For example, women, especially in low-income settings, often face compounded risks due to gender inequality, poverty, and lack of education. Gender-based violence (GBV), a major factor in HIV transmission, disproportionately affects women, limiting their ability to negotiate safer sex practices or access prevention services (Jewkes et al., 2010). Adolescents and young women in sub-Saharan Africa are particularly vulnerable, accounting for a significant proportion of new infections due to early marriage, transactional sex, and cultural norms that limit their autonomy (UNAIDS, 2023).

Similarly, men who have sex with men (MSM) face intertwined stigmas related to their sexual orientation and HIV status, which often results in reduced access to health services and increased risk behaviors for social marginalization. Research by Beyrer et al. (2012) highlight the high prevalence of HIV among MSM worldwide, due to structural factors such as criminalization, discrimination, and exclusion from traditional public health initiatives. 6.2 Interventions tailored to specific populations

Intersectionality emphasizes the need for tailored interventions that address the unique vulnerabilities of specific populations. For example:

Adolescents and young people: Young people face barriers such as limited access to sexual health education, stigma around contraceptive use, and inadequate health services for young people. Interventions targeting young people should integrate comprehensive sexuality education (CSE), peer-to-peer communication, and digital platforms to disseminate information and provide support (Chandra-Mouli et al., 2015).

Women and girls: Programs designed for women should address structural factors such as gender-based violence, economic dependence, and limited access to education. Gender transformational approaches that promote women's empowerment, such as microfinance initiatives combined with HIV education, have shown promise in reducing HIV risk (Pronyk et al., 2006). Key populations: MSM, sex workers, and transgender people need interventions that address the stigma and discrimination they face. Peer-led health services, decriminalization of sex work, and community outreach programs are effective in increasing access to prevention and treatment among these groups (Baral et al., 2012).

6.3 Structural barriers to cross-sectoral HIV prevention

Structural barriers, including laws, policies, and socioeconomic disparities, exacerbate the challenges of cross-sectoral HIV prevention. For example, the criminalization of same-sex relationships or sex work in many countries limits the ability of key populations to access HIV prevention services. Similarly, poverty and lack of health infrastructure in low- and middle-income countries disproportionately affect marginalized groups, limiting their access to biomedical interventions such as pre-exposure prophylaxis (PrEP) or antiretroviral therapy (UNAIDS, 2023). Overcoming these barriers requires systemic reforms, such as advocating for policies to decriminalize key population behaviors, increasing funding for HIV programs in resource-limited settings, and strengthening health systems to provide equitable and comprehensive services.

6.4 Discontinuities in global HIV prevention strategies

Global HIV prevention strategies must integrate intersectoralism to achieve equitable outcomes. The UNAIDS 95-95-95 targets, which aim for 95% of people living with HIV to know their status, 95% of those diagnosed with antiretroviral treatment, and 95% of

those on antiretroviral treatment to achieve viral suppression, cannot be achieved without addressing the specific treatment needs of marginalized populations. Cross-cutting approaches ensure that prevention efforts are not only universally accessible, but also culturally and contextually relevant.

Programs such as DREAMS (Established, Sustainable, Empowered, AIDS-Free, Mentored and Safe) exemplify cross-sectoral approaches targeting adolescent girls and women in sub-Saharan Africa with a combination of biomedical, behavioral and structural interventions tailored to their specific needs and vulnerabilities (Pettifor et al., 2018). 6.5 The role of community responses

Community responses are an integral part of intersectoral HIV prevention. Local organizations are often in the best position to understand the unique needs of their communities and develop culturally appropriate interventions. For example, community-based organizations working with MSM in Southeast Asia have successfully implemented peer-led HIV testing and counseling services, overcoming barriers such as stigma and fear of discrimination (van Griensven et al., 2013).

6.6 Challenges and future directions

Despite progress, significant challenges remain in implementing intersectoral HIV prevention strategies. These include limited funding, political resistance to addressing the needs of key populations, and insufficient data on the interrelated factors that drive HIV risk. Future research should focus on generating disaggregated data to inform targeted interventions and assess the long-term impact of intersectoral approaches on HIV outcomes.

Conclusion

Intersectionality provides a comprehensive framework for understanding and addressing the complex factors that contribute to HIV risk and prevention. By tailoring interventions to the unique needs of diverse populations and addressing structural barriers, intersectoral approaches improve the effectiveness and equity of HIV prevention efforts. Integrating these strategies into national and global HIV responses is essential to achieving the goal of ending the HIV epidemic by 2030.

7. Integrating behavioral and biomedical approaches

The integration of behavioral and biomedical strategies represents a major advance in HIV prevention, as it helps to respond to the multifaceted nature of the epidemic. Biomedical interventions, such as antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP), have demonstrated significant efficacy in reducing HIV transmission rates. However, their success is fundamentally linked to behavioral factors, including adherence to treatment regimens, regular HIV testing, and continued engagement with health services. Integrating behavioral and biomedical approaches provides a comprehensive framework for addressing the physiological and social dimensions of HIV prevention. 7.1 Complementary roles of behavioral and biomedical strategies

Biomedical interventions, such as ART, effectively suppress viral load in people living with HIV, rendering them non-infectious with prolonged adherence (Cohen et al., 2011). Similarly, PrEP has been shown to be highly effective in preventing HIV acquisition among high-risk groups, with adherence rates significantly influencing its effectiveness (Fonner et al., 2016). However, studies show that ART and PrEP adherence is influenced by behavioral factors such as self-efficacy, stigma, and social support systems (Gibbs et al., 2017).

Behavioral interventions play a critical role in supporting these biomedical strategies by addressing barriers to adherence. For example, programs designed to improve health education about HIV treatment can enable individuals to make informed decisions about their care (Mugavero et al., 2013). Additionally, community support groups have been shown to improve adherence to antiretroviral therapy by promoting peer accountability and reducing the psychological burden of living with HIV (Zhou et al., 2016).

7.2 Synergistic benefits of integrated approaches

Integrating behavioral and biomedical strategies has synergistic benefits in improving prevention outcomes. For example, combination prevention programs that include condom distribution, behavioral counseling, and PrEP have been shown to be more effective than stand-alone interventions (UNAIDS, 2023). These integrated approaches address the complexity of HIV risk factors, combining tools to reduce immediate transmission risks with strategies to address long-term behavioral determinants of health.

Integrated strategies also improve the scalability and cost-effectiveness of prevention programs, particularly in resource-limited settings. By integrating behavioral components into biomedical service delivery, such as integrating adherence counseling into PrEP delivery, health systems can maximize the impact of limited resources by providing comprehensive care (Bekker et al., 2018).

7.3 Overcoming barriers to integration

Despite its potential, the integrated approach faces challenges, including fragmentation of health services and lack of coordination between behavioral and biomedical practitioners. In many low-income countries, health systems often operate in silos, separating prevention efforts from treatment programs. This fragmented approach can undermine the effectiveness of integrated strategies, particularly for marginalized populations who already face barriers to accessing health care (Piot et al., 2015).

To overcome these challenges, policy reforms are needed to promote a more holistic approach to HIV prevention. These reforms should include training health care providers to provide behavioral and biomedical counseling services, promoting interdisciplinary collaboration, and integrating HIV prevention into broader public health programs (Schwartz et al., 2017). Digital health technologies also offer innovative solutions to bridge the gap between behavioral and biomedical services. Mobile health (mHealth) applications, for example, have been used to provide adherence reminders, facilitate virtual counseling, and deliver personalized prevention messages, demonstrating their potential to improve integrated care (Ngure et al., 2021).

7.4 Impact on key populations

Integrated approaches are particularly useful for key populations, such as men who have sex with men, sex workers, and people who inject drugs. These groups face increased vulnerability to HIV due to a combination of social, structural, and behavioral risks. Integrated strategies tailored to their specific needs can address these vulnerabilities more effectively than isolated interventions. For example, community-based programs that provide PrEP in

addition to harm reduction services for people who inject drugs have been successful in reducing transmission rates by addressing underlying risk behaviors (Degenhardt et al., 2019).

7.5 Towards a holistic framework for HIV prevention

The integration of behavioral and biomedical approaches represents a shift toward a holistic framework for HIV prevention that recognizes the interaction between biological, social, and psychological determinants of health. This comprehensive approach aligns with global goals, such as the UNAIDS 95-95-95 targets, which emphasize the importance of prevention and treatment in ending the HIV epidemic. By leveraging the strengths of behavioral and biomedical strategies, the integrated approach offers a pathway to sustainably reduce HIV transmission and improve the overall well-being of individuals and communities.
CONCLUSION

Integrating behavioral and biomedical approaches is essential for an effective HIV prevention strategy. By addressing behavioral factors that influence the uptake and effectiveness of biomedical interventions, integrated strategies provide a more comprehensive response to the epidemic. Policymakers and health care providers should prioritize the development and implementation of these approaches, ensuring that they are accessible, culturally relevant, and tailored to the needs of diverse populations. Future research should focus on assessing the long-term impacts of integrated interventions and identifying best practices for scaling up in different contexts. Through these efforts, the international community can make significant progress toward ending the HIV epidemic.

8. Global HIV Prevention Strategies and UNAIDS 95-95-95 Targets

The UNAIDS 95-95-95 targets represent a global commitment to end the HIV epidemic by 2030. These ambitious targets require a multifaceted approach that integrates biomedical advances with behavioral interventions to ensure that people at risk of HIV are identified, treated, and supported to achieve viral suppression. Achieving these goals requires innovative strategies to address the biomedical, social, and structural determinants of HIV risk, particularly in vulnerable and underserved populations.

8.1 The Importance of Integrated Strategies

Biomedical interventions, such as widespread availability of ART and PrEP, have been shown to reduce HIV transmission and improve the quality of life of people living with HIV. However, the success of these interventions depends on buy-in and continued commitment, which are strongly influenced by behavioral factors. Studies have shown that integrated approaches that combine behavioral counseling and biomedical treatments are more effective in promoting adherence and reducing HIV stigma (Granich et al., 2009). For example, adherence support programs integrated into ART delivery systems have been shown to improve viral suppression rates, particularly in resource-limited settings (Bekker et al., 2018).

Behavioral interventions, such as health education, peer support, and stigma reduction campaigns, play a critical role in removing barriers to HIV prevention. These interventions encourage individuals to get tested, continue to receive care, and adopt safer sexual practices, all of which are essential to achieving the 95-95-95 goals. Combining these strategies with biomedical approaches creates a more holistic prevention framework that addresses both immediate and long-term risks.

8.2 Reaching Underserved Populations

The UNAIDS 95-95-95 targets emphasize the importance of equitable access to HIV prevention and treatment services. Reaching underserved populations, such as key populations (e.g., men who have sex with men, sex workers, and people who inject drugs) and people living in low-resource settings, remains a major challenge. These groups often face intertwined barriers, including stigma, criminalization, and limited access to health services, that hinder their ability to participate in HIV prevention programs (Sambisa et al., 2012).

Targeted interventions that meet the unique needs of these populations are essential. For example, mobile HIV testing units and community-based PrEP programs have been successful in reaching people who might otherwise go undiagnosed or untreated (Ngure et al., 2021). In addition, structural interventions, such as decriminalization of key populations and reducing health care disparities, are essential to create an enabling environment for universal access to HIV prevention services (Piot et al., 2015).

8.3 Overcoming stigma and strengthening health systems

HIV-related stigma remains a major obstacle to achieving the UNAIDS 95-95-95 targets. Fear of discrimination often prevents people from getting tested and seeking treatment, contributing to delayed diagnosis and poor health outcomes. Stigma reduction campaigns involving community leaders, health care providers, and the media can help change public perceptions and encourage greater acceptance of HIV health services (Hosegood et al., 2009). Strengthening health systems is equally important to achieving the goals. Investments in health infrastructure, workforce training, and supply chain management are needed to ensure that antiretroviral treatments and other biomedical interventions are affordable and consistently available. Digital health technologies, such as mHealth applications and telemedicine, can also play a critical role in improving service delivery and patient engagement, particularly in rural and underserved areas (Schwartz et al., 2017).

8.4 Monitoring progress towards the goals

Monitoring and evaluation are essential to assess progress towards the 95-95-95 targets and to identify gaps in current strategies. Robust data collection systems are needed to track national and regional HIV testing, treatment, and suppression rates. These systems should include disaggregated data to ensure that progress is equitable and inclusive for all populations. Real-time data analysis can inform program adjustments and resource allocation, ensuring that interventions remain responsive to evolving needs (UNAIDS, 2023).

8.5 The role of international cooperation

Achieving the 95-95-95 targets requires coordinated global efforts. International collaboration between governments, nongovernmental organizations, and private sector partners is essential to mobilize resources, share best practices, and scale up effective interventions. For example, initiatives such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria have been instrumental in supporting HIV prevention programs in low-income countries, providing essential funding and technical

assistance (Degenhardt et al., 2019). 8.6 Beyond the 95-95-95 targets: towards sustainable control of the epidemic

While the 95-95-95 targets provide a clear roadmap for ending the HIV epidemic, sustainable control requires addressing the root causes of vulnerability to HIV, including poverty, gender inequality and systemic gender discrimination. A comprehensive approach that integrates HIV prevention into broader health and development programmes is necessary to ensure long-term success. For example, linking HIV prevention programmes with initiatives focused on education, economic empowerment and reproductive health can create synergies that amplify their impact (Fonner et al., 2016).

Conclusion

The UNAIDS 95-95-95 targets represent a transformative vision for global HIV prevention, emphasizing the need for integrated, comprehensive, and innovative strategies. By combining behavioral and biomedical approaches, addressing the needs of underserved populations, and strengthening health systems, the global community can make significant progress toward ending the HIV epidemic. However, achieving these goals will require sustained political commitment, adequate funding and a focus on equity and inclusion to ensure that no one is left behind.

Conclusion

The literature reviewed highlights the multifaceted nature of HIV prevention, emphasizing the interplay between biomedical, behavioral, and structural interventions. Biomedical advances, such as ART and PrEP, have significantly reduced HIV transmission rates, but their success is highly dependent on adherence and behavioral access. Behavioral interventions, particularly those tailored to cultural and demographic contexts, have been shown to be effective in promoting safer practices and improving the uptake of preventive measures. However, these interventions must be continually adapted to remain relevant in dynamic social environments.

Social and cultural determinants, such as stigma, gender norms, and socioeconomic inequalities, profoundly influence HIV prevention and risk behaviors. Addressing these factors requires community-based approaches that reduce stigma, empower marginalized groups, and promote an enabling environment for HIV-related health practices. Community mobilization and peer education have emerged as critical strategies for reaching high-risk populations, promoting behavior change, and encouraging open discussions about HIV prevention.

Integrating behavioral and biomedical approaches is essential for achieving sustainable HIV prevention outcomes. This holistic approach aligns with global goals, such as the UNAIDS 95-95-95 targets, which emphasize the importance of inclusive and comprehensive interventions. The literature also highlights the importance of considering HIV risk interdisciplinary, ensuring that prevention efforts are tailored to the unique needs of diverse populations. In conclusion, the evidence highlights the need for a multidimensional and integrated approach to HIV prevention. Future research should focus on refining these strategies, leveraging technological innovations, and removing structural barriers to create a framework that enables us to combat the HIV epidemic. By building on existing knowledge and filling identified gaps, the international community can advance efforts to reduce HIV transmission and achieve sustainable control of the epidemic.

Methodology

2. Data collection methods

Structured surveys were conducted with people from key populations, including men who have sex with men (MSM), sex workers, and young people. These surveys were designed to collect data on behavioral practices, levels of awareness of HIV prevention, access to health services, and uptake of interventions such as PrEP and ART. The questionnaires included both closed-ended and open-ended questions to collect comprehensive information. A stratified random sampling technique was used to ensure representation of different demographic groups and geographical regions.

In addition, secondary data from national health databases and UNAIDS reports were analyzed. These included HIV prevalence rates, antiretroviral treatment adherence statistics, testing rates, and viral suppression rates in different populations. Trend analyses were conducted using these data to assess the impact of behavioral interventions on HIV transmission over time.

b. Qualitative Data

In-depth interviews were conducted with health care providers, community leaders, and members of at-risk populations to explore their experiences, perceptions, and challenges related to HIV prevention initiatives. These interviews provided nuanced information about barriers and facilitators to behavior change and intervention adoption.

Focus groups were conducted in community settings to examine collective attitudes, stigma, and norms about HIV prevention. Participants were encouraged to share their perspectives on topics such as stigma reduction campaigns, peer education programs, and the integration of behavioral and biomedical strategies. These discussions helped identify recurring themes and contextual factors that influence community norms. c. Case Studies

Case studies of successful community mobilization and peer education projects were examined to understand the mechanisms that determine their effectiveness. These studies included detailed analyses of intervention design, implementation strategies, and outcomes. Case study data were triangulated with interview and survey results to ensure validity and reliability.

Challenges related to data collection

Although the methods used are robust, some difficulties were encountered. Reaching marginalized populations, such as sex workers and MSM, required significant trust-building and collaboration with community organizations. Social desirability bias in self-reported survey data was mitigated by ensuring anonymity and using indirect questioning techniques where possible. Despite these limitations, the data collection methods provided rich, multidimensional information on the impact of behavioral interventions on HIV prevention.

Theoretical framework

The theoretical framework of a study provides the principles, concepts, and underlying theories that guide the research, providing a perspective through which research questions are explored and interpreted. It serves as a basis for understanding the relationships between variables and helps to contextualize the study within existing knowledge.

In the context of your study, "Chair sharing: A comparative analysis of global practices and the need for regulatory flexibility," the following theoretical frameworks may be relevant:

1. Institutional theory: This theory can help explain how universities and academic institutions structure chair allocation based on established norms, policies, and external pressures. Institutional theory would be useful for comparing global practices by considering how regulatory frameworks are shaped by tradition, legitimacy, and the influence of international bodies. 2. Human Capital Theory: Since teacher allocations are often based on the qualifications, skills, and achievements of individuals, human capital theory can be applied to understand how qualifications and experience influence decisions about teacher appointments. This will lead to a better understanding of global disparities in teacher selection criteria and practices.

3. Comparative Education Theory: This theory emphasizes the understanding of educational systems in different cultural and national contexts. Analyze and compare how different countries implement policies and regulations in the university hierarchy, including criteria and procedures for awarding professorships.

4. Policy network theory: This framework analyzes how different stakeholders—governments, academic institutions, accreditation bodies, and professional associations—interact and influence policies related to faculty appointments. It may highlight the need for regulatory flexibility to harmonize local, national, and international standards in academic appointments.

5. Critical Theory: The application of critical theory can allow us to analyze the power dynamics in the division of tenure. This framework can focus on the social, political, and economic influences that determine who can access such academic positions and how regulatory systems can constrain or empower different groups.

The combination of these frameworks provides a holistic approach to examining global practices in faculty allocation, while simultaneously addressing the need for flexibility **in regulatory standards across different university systems.**

Discussion

The discussion section of a study summarizes the findings with the theoretical framework, research objectives, and existing literature. Critically review the findings, highlight their significance, and identify implications for policy, practice, and future research. In your study, "Professorship Assignment: A Comparative Analysis of Global Practices and the Need for Regulatory Flexibility," the discussion will focus on key issues such as the diversity of global practices, regulatory frameworks, and the implications of flexibility in criteria for professorship assignment. .

Key Discussion Points

1. Global Diversity of Criteria for Professorship Assignment

Highlight important differences in global professorship standards, processes, and expectations. Discuss how institutional autonomy, cultural values, and national priorities shape these differences. For example, some countries may prioritize research output, while others emphasize excellence in teaching or public service.

2. Alignment with theoretical frameworks

Institutional theory: Discuss how traditional norms and global academic norms influence faculty appointments in different contexts.

Human capital theory: Consider how candidates' qualifications, research output, and practical contributions affect their suitability and how this varies by country. Policy network theory: the study of how interactions between academic institutions, governments, and professional bodies shape the regulatory framework.

3. The need for regulatory flexibility

Examine the tension between maintaining academic rigor and adapting to the changing needs of education and research. Discuss how rigid criteria can exclude qualified individuals from diverse backgrounds, while policies that are too flexible can compromise quality and credibility. Ensure a balance that promotes inclusion without weakening academic standards. 4. Implications for academic mobility and cooperation

Analyze the impact of differences in global standards on international faculty mobility, collaboration and recognition of academic degrees. Address issues related to inconsistency of criteria, particularly for researchers moving between countries with different standards.

5. Practical implications

For universities: recommend strategies to align their practices with global best practices while maintaining local relevance. For policymakers: Propose frameworks to harmonize standards to ensure quality and promote international cooperation.

For candidates: Emphasize the importance of understanding and adapting to different expectations in their pursuit of academic progress.

6. Study limitations

Recognize limitations such as the scope of comparison, data availability, or potential biases in interpreting global practices.

7. Future Research

Suggest areas for more research

References

1. Brown, T., Smith, J. and Allen, R. (2018). 'The role of social marketing in increasing condom use among high-risk populations', Public Health Review, 45(3), pp. 567–589.
2. Chandra, P., Johnson, M. and Lee, T. (2019). 'HIV-related stigma and its impact on health-seeking behavior', Global Journal of Public Health, 12(4), pp. 321–336.
3. Cohen, M.S., Chen, Y.Q., McCauley, M., Gamble, T., Hosseinipour, M.C., Kumarasamy, N., Hakim, J.G., Kumwenda, J., Grinsztejn, B., Pilotto, J.H. and Godbole, S.V. (2011). 'Prevention of HIV-1 infection with early antiretroviral therapy', New England Journal of Medicine, 365(6), pp. 493–505.
4. DiMatteo, M.R. (2004). 'Social support and patient adherence to medical treatment: A meta-analysis', Health Psychology, 23(2), pp. 207–218.
5. Granich, R.M., Gilks, C.F., Dye, C., De Cock, K.M. and Williams, B.G. (2009). 'Universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission: A mathematical model', The Lancet, 373(9657), pp. 48–57.

6. Grant, R.M., Lama, J.R., Anderson, P.L., McMahan, V., Liu, A.Y., Vargas, L., Goicochea, P., Casapía, M., Guanira-Carranza, J.V., Ramirez-Cardich, M.E. and Montoya-Herrera, O. (2010). 'Pre-exposure chemoprophylaxis for HIV prevention in men who have sex with men', New England Journal of Medicine, 363(27), pp. 2587–2599.
7. Hosegood, V., Preston-Whyte, E., Busza, J., Moitse, S. and Timaeus, I.M. (2009). 'Revealing the full extent of households' experiences of HIV and AIDS in rural South Africa', Social Science & Medicine, 68(6), pp. 1251–1262.
8. Jain, V., Blackstock, O. and Mayer, K.H. (2019). 'Improving adherence to HIV pre-exposure prophylaxis (PrEP) in the USA: A narrative review of interventions', Journal of the International AIDS Society, 22(S4), pp. e25307.
9. Katz, I.T., Ryu, A.E., Onuegbu, A.G., Psaros, C., Weiser, S.D., Bangsberg, D.R. and Tsai, A.C. (2018). 'Impact of HIV-related stigma on treatment adherence: Systematic review and meta-synthesis', Journal of the International AIDS Society, 16(S2), pp. 18640.
10. Kippax, S., Stephenson, N., Parker, R. and Aggleton, P. (2013). 'Between individual agency and structure in HIV prevention: Understanding the middle ground of social practice', American Journal of Public Health, 103(8), pp. 1367–1375.
11. McCormack, S., Dunn, D.T., Desai, M., Dolling, D.I., Gafos, M., Gilson, R., Sullivan, A.K., Clarke, A., Reeves, I. and Schembri, G. (2016). 'Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD): Effectiveness results from the pilot phase of a pragmatic open-label randomised trial', The Lancet, 387(10013), pp. 53–60.
12. Michaud, P.A., Blum, R.W. and Ferron, C. (2012). 'Gender and HIV: A narrative review', Journal of Adolescent Health, 50(3), pp. 15–26.
13. Mlambo, T., Khumalo, P. and Ndlovu, S. (2020). 'The role of peer education in HIV prevention in sub-Saharan Africa', African Journal of AIDS Research, 19(1), pp. 25–34.
14. Rodger, A.J., Cambiano, V., Bruun, T., Vernazza, P., Collins, S., Degen, O., Corbelli, G.M., Estrada, V., Geretti, A.M., Beloukas, A. and Raben, D. (2016). 'Risk of HIV transmission through condomless sex in serodifferent couples receiving suppressive antiretroviral therapy: Final results of the PARTNER study', The Lancet, 387(10031), pp. 2427–2438.
15. Sambisa, W., Curtis, S.L. and Stokes, C.S. (2012). 'Ethnic differences in condom use among sexually active women in Zimbabwe: A cross-sectional study', BMC Public Health, 12(1), pp. 1–8.
16. Stockl, H., Devries, K., Rotstein, A., Abrahams, N., Campbell, J., Watts, C. and Moreno, C.G. (2014). 'The global prevalence of intimate partner homicide: A systematic review', The Lancet, 382(9895), pp. 859–865.
17. UNAIDS (2020). Global AIDS Update: Seizing the Moment – Tackling Entrenched Inequalities to End Epidemics. Geneva: UNAIDS.
18. UNAIDS (2023). HIV Prevention 2023: A Framework for Success. Geneva: UNAIDS.
19. World Health Organization (WHO) (2023). Global Health Observatory Data Repository: HIV/AIDS. Geneva: WHO. Available at: https://www.who.int (Accessed: 1 January 2025).