



Factors Influencing Risky Sexual Behavior Among MSM and Transgender Individuals and its Relationship to Hiv/Aids Prevention: A Literature Review

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Abstract

HIV/AIDS remains a global public health challenge with a high prevalence among vulnerable populations, particularly men who have sex with men (MSM) and transgender individuals. These groups face various barriers, such as social stigma, discrimination, and limited access to healthcare services, which exacerbate the risk of engaging in risky sexual behavior. This study employed a literature review design. Data sources included scientific articles retrieved from Google Scholar and PubMed. Factors influencing risky sexual behavior include young age, low levels of education and knowledge, negative social environments, unstable economic conditions, and experiences of stigma and discrimination. HIV prevalence among transgender and MSM individuals in developing countries remains high (e.g., 75.7% in the Caribbean, 25–35% in Peru). Effective prevention efforts include consistent condom use, utilization of Pre-Exposure Prophylaxis (PrEP), and access to transgender-friendly healthcare services. However, major challenges remain in terms of PrEP adherence, awareness, and addressing social and structural barriers. Risky sexual behavior among MSM and transgender populations results from a complex interaction of social, economic, and structural factors. HIV/AIDS prevention requires a holistic approach, including comprehensive sexual education, inclusive and friendly healthcare services, strategies to reduce stigma and discrimination, and the promotion and facilitation of access to condoms and PrEP. Interventions should engage communities, healthcare providers, and policymakers to establish a supportive and safe system for vulnerable populations.

Introduction

HIV remains a global health challenge with a high prevalence among vulnerable population groups, including transgender women, men who have sex with men (MSM), and hijra in various countries such as Peru, Bangladesh, and Indonesia (Winkler & Bantekas, 2024). In Brazil, despite a decline in AIDS detection rates since 2010, the 15–24-year age group has shown an increase in new infections. Studies indicate that nearly 3.4 million adolescents worldwide are living with HIV. Deviant sexual behaviors, including homosexuality, have become a growing concern in public health across several nations (Andini et al., 2025; Pati et al., 2024; Panggabean et al., 2025). Homosexuality can be defined as a sexual orientation characterized by emotional and physical attraction to individuals of the same sex. Indonesia is one of the countries with a significant LGBT population, estimated to account for approximately 3% of the total population, many of whom face high levels of social stigma and health risks (Septarini et al., 2024; Jocelyn et al., 2024; Alibudbud, 2025). Data show that MSM

have a high prevalence of HIV/AIDS infections, making them one of the key risk groups (Herman et al., 2024; Sarfiani et al., 2024; Zhou et al., 2025).

Transgender individuals also face significant challenges regarding risky sexual behavior (Ceolin et al., 2024; Ahuwalia et al., 2024; Khan et al., 2024). Many work as commercial sex workers, which elevates their risk of contracting sexually transmitted infections (STIs). Transgender individuals, particularly those living with or affected by HIV, encounter substantial barriers in accessing health and social services (Elendu et al., 2024; Saadat et al., 2024; Bigio et al., 2025). Factors such as low educational attainment, lack of access to health information, and limited risk perception contribute to risky sexual behavior in this population. Since the beginning of the HIV pandemic, this group has been globally recognized as one of the most affected, with HIV prevalence significantly higher than in the general population. Numerous studies have demonstrated that stigma, discrimination, and lack of understanding from healthcare providers serve as major obstacles to accessing proper care (Larsen et al., 2025; Ngondwe et al., 2025; Temenos et al., 2024).

A literature report by Avery R. Everhart et al. focused on the perspectives and experiences of transgender individuals in Canada regarding their access to healthcare and social services. Using semi-structured interviews and focus groups with 76 transgender participants across five major cities, the study aimed to identify their specific needs and propose improvements in the structure and type of services available to reduce stigma and discrimination (Girma et al., 2024; Gurung et al., 2025; Cabieses et al., 2024).

Participants emphasized the importance of transgender-friendly and tailored services, as well as the need for service integration to ease navigation through complex healthcare systems (Bhattacharya & Ghosh, 2025; Monaco et al., 2024; Aguayo et al., 2025). They also proposed that members of the transgender community be involved as care coordinators to foster a more inclusive and supportive environment. By understanding the perspectives and needs of transgender women, this study is expected to offer concrete recommendations for improving health and social services, and to amplify the voices of those often overlooked in HIV-related research and policymaking (Ahmed et al., 2025; Boakye et al., 2024; Mollidrem & Smith, 2024).

Efforts to prevent HIV infection among high-risk groups, including MSM and transgender populations, have been implemented through programs such as pre-exposure prophylaxis (PrEP) (Moreno et al., 2025; Marins et al., 2025; Dave, 2024). PrEP has been shown to be effective in preventing HIV transmission; however, significant challenges remain regarding adherence and user retention, particularly among adolescents. Previous studies have indicated that factors such as low risk perception, substance use, and social stigma influence individuals' decisions to initiate or continue PrEP usage. Engagement in risky sexual behaviors also contributes to high transmission rates within these populations (Chainok et al., 2025; Elendu et al., 2024; Briken et al., 2024).

A literature review by Jessica E. Long et al. previously described efforts to understand HIV transmission dynamics using molecular and phylodynamic approaches in Peru, and explored the acceptability and feasibility of HIV self-testing (HIVST) in Bangladesh. The study in Peru found that men who engage in sexual activity with transgender women play a key role in HIV transmission networks involving transgender individuals, while the study in Bangladesh highlighted the potential of HIVST to expand access to HIV detection amid prevailing stigma and social barriers. Both studies offer crucial insights for developing targeted interventions and more effective prevention models for vulnerable populations. Another study conducted in the Caribbean aimed to identify barriers to HIV testing and intervention strategies among high-risk groups in the region, including men, transgender individuals, and female sex workers (Zhu et al., 2024; Amzat et al., 2024; Anyiam et al., 2024).

Based on this background and the aforementioned literature, further research and intervention are necessary to understand the risk factors influencing risky sexual behavior and to evaluate the effectiveness of existing prevention strategies. These efforts are crucial for reducing the transmission of sexually transmitted infections and improving the quality of life for vulnerable populations.

Methods

The preparation of this literature review began with a comprehensive search of journals, articles, and scholarly works using search engines such as Google Scholar and PubMed. Keywords included “transgender,” “MSM,” “transgender and HIV,” “MSM and HIV,” and “HIV prevention.” Inclusion criteria comprised all studies discussing transgender and MSM populations in relation to HIV prevention in developing countries, where HIV remains a global health challenge with high prevalence among vulnerable groups. Several of the included studies specified that participants ranged in age from 15 to 65 years.

Relevant articles addressed various themes: descriptions of risky sexual behavior and HIV/AIDS prevention efforts among MSM; contributing factors to risky sexual behavior in MSM and transgender populations; the influence of transgender individuals’ perceptions of HIV/AIDS on their preventive behavior; healthcare service utilization patterns among MSM and transgender individuals; risk factors for sexually transmitted infections (STIs) within these populations; the significance of integrated, transgender-friendly healthcare services for those living with HIV; and adherence levels and determinants of discontinuation of pre-exposure prophylaxis (PrEP) as a preventive strategy against HIV/AIDS.

This review encompassed various research types, including qualitative studies, participatory qualitative approaches, quantitative studies with survey methods and statistical analysis, descriptive studies, cohort studies, secondary data analysis, and systematic reviews. All sources analyzed addressed risky sexual behavior among MSM and transgender populations in connection with HIV/AIDS prevention efforts in developing countries over the past ten years.

Result and Discussion

The literature search yielded 22 relevant articles that explored risky sexual behavior among MSM and transgender individuals in relation to HIV/AIDS prevention in developing countries. The literature review identified a range of interrelated factors shaping risky sexual behavior among men who have sex with men (MSM) and transgender individuals. Rather than operating in isolation, these factors intersect and reinforce one another, producing a heightened vulnerability to HIV transmission. A synthesis of the findings suggests that demographic characteristics, structural inequalities, and sociocultural dynamics play equally important roles in determining behavioral outcomes.

One of the most consistent findings relates to age. Younger individuals, particularly adolescents and young adults, are more likely to engage in high-risk sexual practices due to limited knowledge of sexual health and stronger susceptibility to peer influence. At this stage of life, identity exploration often occurs without adequate guidance, creating conditions where misinformation and risk-taking prevail. Closely connected to age is the role of education and knowledge. Studies repeatedly show that individuals with limited formal education are less aware of HIV prevention methods, and consequently less likely to practice safe sex. Conversely, higher levels of education are associated with increased awareness, more consistent condom use, and greater confidence in navigating healthcare systems.

Beyond individual characteristics, the social environment emerges as a decisive factor. Discrimination, peer pressure, and exposure to gender-based violence were frequently documented as triggers for risky sexual practices. For transgender individuals in particular, rejection from family and community often results in marginalization and unsafe coping

strategies. These social pressures are compounded by economic hardship. Many MSM and transgender women enter sex work as a means of survival, often at the expense of negotiating condom use or consistent access to preventive tools. Poverty not only shapes sexual decision-making but also limits access to healthcare and information.

Perhaps the most pervasive structural barrier across studies is stigma and discrimination. When individuals anticipate prejudice in healthcare settings, they are less likely to seek testing or counseling, and instead may conceal their identity and behaviors. This avoidance reinforces cycles of vulnerability, with stigma acting as both a direct and indirect driver of HIV risk. These intersecting influences are summarized in Table 1, which highlights the multi-dimensional nature of risky sexual behavior.

Table 1. Factors Influencing Risky Sexual Behavior

Factor	Description	Impact on HIV Risk
Age	Adolescents and young adults are more vulnerable due to lack of experience and knowledge	More easily influenced, inconsistent condom use
Education & Knowledge	Low education → limited access to information	Low awareness of HIV prevention
Social Environment	Peer pressure, gender-based violence, negative norms	Encourage risky sexual behavior
Economic Factors	Poverty leads to engagement in sex work	Reduced ability to negotiate condom use
Stigma & Discrimination	Prevents access to healthcare services	Hidden identity, reluctance to test for HIV

The second theme determined in the literature is the epidemiological situation of HIV in men who have sex with men (MSM) and transgender people. It is always proven in practice that prevalence is much higher in such populations than in the heterogeneous population, albeit unevenly across countries and regions. In Indonesia, e.g. HIV prevalence among MSM has been estimated at 5 - 28%, which indicates both underreporting and urban epidemics. According to Peru, there is an alarming prevalence of 25 35 per cent in trans women, highlighting their leading position in the networks of transmission. In the meantime, the prevalence rates in Bangladesh and Thailand are between 6 9 percent and 30 9 percent, which can be explained by the structural obstacles that still exist, including the lack of testing and medical care.

Caribbean has perhaps the most dramatic case of up to 75.7 per cent prevalence in a sampled transgender group. The prevalence in the United States is 14.1 □ werden, unfortunately, hides the fact that there are major racial differences, with the rates of infection reaching 44.2 □ werden among the Black transgender women. Adolescents in MSM and transgender populations have high risk in Brazil due to non-compliance with pre-exposure prophylaxis (PrEP). In combination, these results indicate that the HIV epidemics are still clustered in the populations already affected by the socio-economic and structural disparity. A closer view of how local contexts determine the epidemiological outcomes is presented in Table 2 in the form of a comparative snapshot of the prevalence rates across countries.

These studies were divided into a few thematic groups, namely: risky sexual behaviour leading to the spread of HIV among MSM/transgender persons (4 articles); perceptions of HIV/AIDS as an influencer of prevention behaviour (7 articles); factors affecting PrEP adherence or discontinuation (3 articles); knowledge of condom use as a preventive measure (2 articles); knowledge of HIV transmission (4 articles); and healthcare service utilisation among transgender/MSM populations living with HIV (2 articles). The developing nations like Indonesia, Thailand, Bangladesh, Peru, Canada, the Caribbean and Brazil were used as research

sites. The research designs included prospective cohort studies, surveys, statistical analysis, systematic reviews, and meta-analyses.

Table 2. HIV Prevalence among MSM and Transgender Populations in Different Countries

Country/Region	Population	HIV Prevalence (%)	Notes
Indonesia	MSM (2014)	5–28%	66,180 HIV+
Peru	Transgender	25–35%	Key role in transmission networks
Bangladesh	Hijra/Transgender	6–8%	Limited access to HIV testing
Thailand	Transgender	14–30%	Study among young sex workers
Caribbean	Transgender	75.7%	103 out of 137 tested positive
United States	Transgender women	14.1%	Higher among Black women (44.2%)
Brazil	MSM & Transgender adolescents	High	Challenges with PrEP adherence

he prevalence data define the scope of the issue; at the same time, the review presents a variety of preventive interventions, which have proven to decrease risk. Continuous access to healthcare services, including voluntary counseling and testing (VCT), antiretroviral therapy (ART), and programmes specifically serving the needs of transgender individuals and men who have sex with men is required. Where testing and treatment are inclusive, the uptake is substantially greater. Condom use has been one of the most economically effective preventive measures, with many studies showing inconsistency, which can often be explained by stigma or embarrassment, or the lack of its accessibility.

One of the most promising interventions has been pre-exposure prophylaxis (PrEP), which has produced significant decrease in HIV within high-risk groups. However, the compliance is still an issue, especially in the settings when stigma and misinformation discourage further use. Comprehensive sexual education also plays a decisive role as it provides people with knowledge and risk awareness, but its practice is numerous times faced with opposing forces in the culturally conservative world. Finally, social and policy actions, including anti-discrimination laws and community-based advocacy are essential components of creating enabling conditions under which the prevention efforts can thrive.

Table 3. HIV/AIDS Prevention Strategies

Strategy	Explanation	Barriers
Healthcare Access	VCT, ART, counseling, transgender-friendly services	Stigma, discrimination, cost
Condom Use	Primary and cost-effective prevention method	Inconsistent use, social stigma
PrEP	Effective in reducing HIV transmission	Low adherence, stigma, limited awareness
Comprehensive Sexual Education	Improves knowledge and risk perception	Cultural and religious resistance
Social & Policy Support	Reduces stigma, community advocacy	Slow implementation

What emerges from this review is a picture of HIV vulnerability that cannot be reduced to individual decisions alone. Risky sexual behavior is shaped by forces that extend from personal

circumstances to broader structural inequities. Effective prevention therefore requires more than biomedical tools; it calls for environments where knowledge, resources, and social acceptance come together to enable safer choices. Addressing stigma, ensuring equitable access to services, and fostering inclusive policies are not ancillary measures they are central to the effectiveness of any prevention strategy.

Prevalence Of Msm/Transgender Populations In Developing Countries

Quantitative studies reveal significant HIV prevalence rates among MSM and transgender individuals, particularly concerning health risks and infection rates. In the United States, the estimated prevalence of HIV among transgender women is approximately 14.1%, while transgender men have a prevalence rate of 3.2%. Overall, confirmed HIV prevalence within the transgender population is around 9.2%.

Approximately 31% of transgender individuals are engaged in sex work, with a higher percentage among transwomen (37.9%) compared to transmen (13.1%). The highest prevalence of HIV is found among Black transgender women, with infection rates reaching 44.2%.

Indonesia ranks as the fifth-largest country in terms of LGBT population, estimated at 3% of the national population. Out of 250 million citizens, approximately 7.5 million are identified as LGBT. According to estimates by the Indonesian Ministry of Health in 2014, there were 1,095,970 men who have sex with men (MSM), whether openly or not, and over 5% (66,180 individuals) were living with HIV. The United Nations has projected an even higher figure, estimating 3 million LGBT individuals in 2011. The highest percentage of HIV transmission in Indonesia is attributed to high-risk sexual behavior among homosexual men, reaching 28%.

In Peru, the HIV prevalence among transgender individuals ranges from 25% to 35%. In Bangladesh, the estimated HIV prevalence among transgender individuals, including hijra, is around 6% to 8%. In Thailand, the HIV prevalence among transgender individuals is estimated between 14% and 30%. In the Caribbean, of the 137 transgender individuals surveyed, 103 were found to be HIV-positive, representing 75.7% of the total sample.

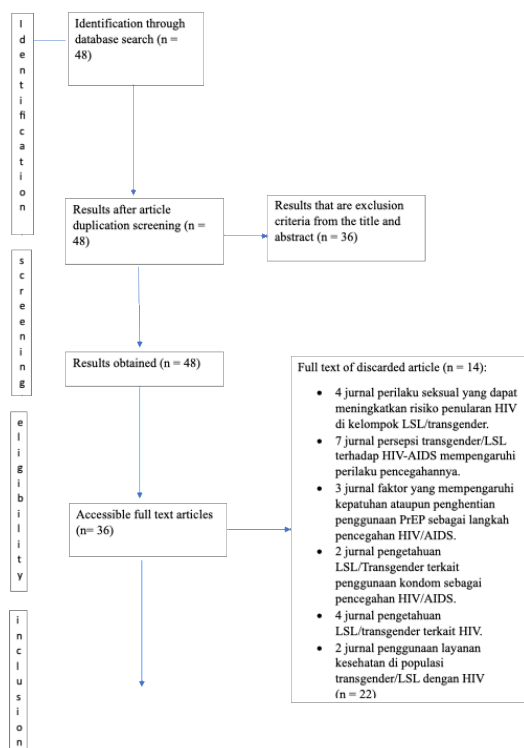


Figure 1. Flow chart journal selection process.

Factors Influencing Risky Sexual Behavior Among Transgender Individuals and MSM

Some researchers believe that homosexuality stems from childhood experiences, particularly interactions between children and their parents. However, in reality, various factors contribute to risky sexual behavior, including age, education level, knowledge level, environmental or social influences, peer pressure, media exposure, economic instability, as well as trauma and violence.

Characteristics of Influencing Factors

Age

Young age is often associated with a lack of experience and inadequate knowledge of sexual risks, which may increase the likelihood of engaging in risky behavior. Adolescents and young adults tend to be more susceptible to peer pressure. Younger individuals may have less access to adequate information compared to older individuals, making them more vulnerable to high-risk behavior. Adolescents are also more likely to explore their sexual identity and may be easily influenced by peers and media, without fully understanding the consequences of their actions. Age serves as an indicator of maturity level and decision-making capacity.

Educational and Knowledge Level

Higher levels of education are frequently associated with better awareness of HIV risk and preventive measures. Transgender individuals or MSM with higher educational attainment tend to have greater awareness of the importance of condom use and other preventive methods, which can reduce risky sexual behavior and stigma. Those with better education are also generally more open and capable of accessing sexual health information, making them more proactive in adopting safe sexual practices.

Conversely, lower levels of education are often linked to limited knowledge of sexual health, making individuals more vulnerable to deviant sexual behavior due to their lack of awareness of the consequences and limited access to relevant information. This can result in poor decision-making related to sexual behavior, such as inadequate knowledge of contraceptive or condom use. Transgender individuals with lower education levels may also face restricted access to HIV prevention information, potentially increasing their risk of infection.

Environmental Influence

Social and environmental factors play a significant role in the behavior of transgender individuals and MSM. Those living in unsafe environments or experiencing gender-based violence are more likely to engage in risky sexual practices, especially when facing discrimination. Social and familial environments can also contribute to deviant behavior. For example, negative peer influence and harmful social norms may pressure individuals into engaging in risky activities. Unsupportive environments may hinder access to healthcare services and HIV prevention information.

Economic Factors

Economic instability can significantly affect sexual behavior. Individuals living in poverty-stricken areas may be more likely to engage in risky sexual activities as a means of financial support, such as commercial sex work to meet daily needs. Economic pressure may also lead individuals to disregard safe sexual practices, such as condom use, prioritizing financial needs instead. Furthermore, poor economic conditions can limit access to sexual education, healthcare services, and information about HIV/AIDS, which are crucial in mitigating risky sexual behavior.

Stigma and Discrimination

Stigma against MSM and transgender individuals may prevent them from seeking the information and healthcare services they need, thereby increasing their risk of engaging in risky sexual behavior. Social discrimination can pressure individuals to hide their identities, affecting their mental health and sexual behavior due to a lack of support and access to accurate information. Such stigma can lead to behaviors like avoiding condom use or seeking sexual relationships in unsafe environments. Discrimination can also be a significant barrier to accessing necessary healthcare services. For example, discrimination faced by transgender women (waria) in healthcare settings can exacerbate their risk of contracting HIV/AIDS.

Efforts of Transgender Individuals and MSM in HIV Prevention

Access to Healthcare Service

Access to adequate and affordable healthcare services is essential in enabling individuals to obtain the necessary information and treatment to prevent HIV. This includes physical examinations, laboratory testing, HIV treatment, and counseling, which are all critical components of HIV prevention. The inability to access these services can increase the risk of infection among MSM and transgender populations, as they may lack the information or care required to protect themselves against HIV/AIDS.

Programs that provide access to sexual health education and services can help reduce risky behaviors and improve prevention efforts. Adequate healthcare access can increase the use of preventive measures such as condoms and pre-exposure prophylaxis (PrEP), both of which are crucial tools in HIV prevention. When MSM and transgender individuals feel accepted and experience no stigma in healthcare settings, they are more likely to seek preventive services, undergo HIV testing, and receive appropriate care.

Condom Use

Consistent condom use among MSM and transgender populations remains one of the most effective methods of preventing HIV transmission. Awareness and knowledge regarding the importance of condom use significantly influence the adoption of safer sexual practices within these populations, providing protection against HIV/AIDS. Condoms serve as an effective physical barrier, and increased awareness about their benefits can help reduce infection rates.

Condom use is a vital prevention strategy, particularly among individuals engaged in high-risk sexual behavior. Knowledge of HIV and prevention methods-including condom use-is essential. Educational programs and improved condom accessibility can help reduce risky sexual behavior among MSM and transgender individuals. Public awareness of condoms' effectiveness in preventing infection is crucial. However, stigma and lack of knowledge can hinder effective condom use, highlighting the need to create a supportive and informed environment.

While PrEP is a highly effective preventive method, condom use remains important for providing additional protection against HIV and other sexually transmitted infections (STIs). Awareness of the combined effectiveness of PrEP and condoms can significantly enhance prevention outcomes.

Use of PrEP

PrEP is a valuable option for individuals with high-risk sexual behaviors-especially among MSM and transgender populations-as a means of preventing HIV transmission. For those at heightened risk, PrEP provides an added layer of protection. Awareness of PrEP and access to services that provide it are essential in reducing infection risk.

Education regarding the use of PrEP and accessible healthcare services can promote its uptake as part of a comprehensive HIV/AIDS prevention strategy, enhancing protection among high-risk groups. By using PrEP, individuals can significantly lower their chances of acquiring HIV during sexual activity. PrEP usage offers a sense of security that may encourage safer sexual practices. Studies have shown a substantial decline in HIV infection rates among MSM and transgender individuals using PrEP.

However, stigma and discrimination can impede access to PrEP, making it essential to foster a supportive and inclusive environment. Additionally, a lack of social support may reduce adherence to the PrEP regimen. Awareness of PrEP's role in prevention must be accompanied by adequate support systems. A positive environment can encourage continued use, whereas a negative or uninformed one may lead to discontinuation.

Conclusion

Risky sexual behavior among MSM and transgender individuals is influenced by multiple interrelated factors, which can be categorized into key areas such as age, education and knowledge, access to healthcare, economic conditions, social environment, and stigma or discrimination. HIV/AIDS prevention in MSM and transgender populations requires a holistic and integrated approach. Emphasis should be placed on comprehensive sexual health and HIV education, improved access to healthcare services, economic support to reduce pressures that drive risky behaviors, and efforts to reduce stigma and discrimination through public awareness campaigns. Interventions involving community members, healthcare providers, and policymakers are needed to foster a safe and supportive environment where individuals can access information and prevention services without fear or shame. Furthermore, promoting condom use and increasing access to PrEP must be integral components of any prevention strategy aimed at reducing HIV transmission among high-risk groups. By understanding and addressing the factors influencing risky sexual behaviors, more effective strategies can be developed to combat the HIV/AIDS epidemic among MSM and transgender populations.

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