



# HIV Infection among Transgender Women: Challenges and Opportunities

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Impressive gains continue to be made in the global fight against HIV disease. Notably, a new and growing body of observational and experimental evidence has revealed the powerful role that antiretroviral therapy can play in reducing not only morbidity and mortality at the individual level, but also HIV transmission at the population level [1,2]. This has led to renewed calls for the aggressive scale-up of HIV treatment, calls that have been supported by an array of cost effectiveness studies and prompted slogans referring to a potential "AIDS-free generation". In addition, several studies demonstrated the potential efficacy of pre-exposure prophylaxis (PrEP) among HIV-negative individuals at risk, although fears regarding low adherence and implementation challenges resulted in a low uptake of this intervention. In 2013, the US Centers for Disease Control and Prevention released new evidence from the Bangkok Tenofovir Study suggesting that the benefits of PrEP interventions could likely be extended to people who inject drugs [3]. This trial built upon the results of previous studies reporting on potential benefits of PrEP for men who have sex with men and heterosexually active women and men [4-6].

Despite the excitement regarding these recent advances in the response to the global HIV pandemic, much work remains to be done. HIV continues to spread among vulnerable populations with low access to evidence-based prevention and programs, including sex workers and people who inject drugs. However, one key affected population that too often is entirely neglected in efforts to address HIV infection is transgender women.

Transgender women are individuals born as males but who later assume a feminine gender expression or identity [7]. Evidence from various settings suggests that transgender women often contend with high rates of HIV infection. In a 2013 study published in *Lancet Infectious Diseases*, Baral et al. reported on the results of a systematic review and meta-analysis of studies of HIV infection among 11,066 transgender women in the USA, six Asia-Pacific countries, five Latin American countries, and three European countries [8]. These authors found an extremely elevated odds of HIV infection among these women (Odds ratio: 48.8, 95% Confidence interval: 21.2-76.3), and this level of risk did not vary across low-, middle- and high-income settings. In many settings, the risk of HIV infection among transgender women occurs through multiple pathways, including high-risk drug use, sex work, and injection with hormones or other products such as silicone and industrial oils [9,10]. These risks are further exacerbated by extreme levels of violence experienced by transgender women, low levels of gender-competent care among healthcare providers, as well as stigma and discrimination experienced within various public and non-public settings, including healthcare facilities [7,11]. Violence and abuse among transgender women has been associated with HIV infection and sexual risk-taking in this population [12]. These problems collectively create further social barriers to healthcare, including HIV prevention and treatment programs [7]. Indeed, recent studies have revealed low rates of HIV testing and adherence to antiretroviral therapy among transgender women, as well as elevated rates of HIV-related mortality [13-15].

While there is much excitement about novel medical approaches to addressing HIV disease, it is clear that for many key affected populations, including transgender women, HIV risk behavior and access to HIV prevention, treatment and care are conditioned primarily by factors that reside outside the individual [16]. This in part explains the increasing awareness of the limitations of purely individually focused approaches to addressing HIV disease [17]. Although a relatively new area of investigation, and as yet not fully understood, the interactions among macro-, meso- and micro-level dimensions of physical, social, and structural environments have been shown to exert considerable influence on the distribution of disease and risk behaviors within marginalized populations at high risk of HIV infection [18,19]. Social factors 'structuring' HIV risk include peer and social networks, stigma and discrimination, and social-cultural norms and expectations. Structural factors include regulatory approaches (e.g., legislation criminalizing sex work and drug use, homosexuality and anal sex), law enforcement practices, and systemic and programmatic barriers to housing, prevention programs and HIV treatment. Physical factors include neighborhood-level deprivation, as well as the physical features of sex work and drug scenes. Growing awareness of the importance of social, structural, and environmental drivers of HIV risk and healthcare access has prompted calls for the development of novel social-structural and environmental interventions. In light of evidence pointing to the social-structural production of HIV risk among transgender women, an increasing number of authors have called for the development of such interventions specifically for this population. For example, a recent review called for various social and structural interventions for transgender women, including the decriminalization of cross-dressing, anal sex, and sex work, as well as the prohibition of discrimination against transgender women in education, healthcare, employment and housing [7]. Also, highlighted as important were community mobilization and empowerment initiatives, and peer support groups [7]. Among the more interesting recent developments in the area of structural interventions for transgender populations is the passing of Argentina's "Gender Identity Law" [20]. Within Argentina, the prevalence of HIV infection is high among transgender women, and was estimated to be 34% as recently as 2011 compared to a prevalence

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of 0.4% in the general population [21]. In response to this and other related challenges, the national government instituted the new law that establishes a framework based on equity and human rights, and that acknowledges the right to self-defined gender identity. This law further supports the full development of one's person in line with one's chosen gender identity, and ensures the right to appropriate health services. However, the impact of this new law remains unevaluated.

Although significant progress has recently been made in the fight against HIV/AIDS, there is much work to be done. In particular, several key affected populations continue to contend with high rates of HIV infection as well as barriers to HIV prevention and treatment programs. Transgender women are one such group, and given the high rates of HIV infection in this population, and the extreme discrimination and violence endured by transgender women, there is an urgent need to develop and evaluate novel interventions that are tailored for this vulnerable population. Given that many of the risks and barriers to healthcare experienced by transgender women are social and structural in nature, interventional efforts should move beyond individual-level approaches and include social and structural interventions at the level of policy and law, as well as within communities and health systems.

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