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Dual HIV risk and vulnerabilities among women who use or inject drugs: no single prevention strategy is the answer

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Abstract

Purpose of review—This article examines the dual HIV and sexually transmitted infection (STI) risk behaviors engaged in by women who use or inject drugs; the individual, social, and structural drivers of HIV and STI risk; prevention strategies; and the implications for multilevel, combined, sex-specific HIV prevention strategies.

Recent findings—Women who use or inject drugs, especially female sex workers, are at dual risk for HIV, the hepatitis C virus (HCV), and other STIs. In countries with HIV prevalence higher than 20% among injecting drug users (IDUs), female IDUs have slightly higher HIV prevalence than male IDUs. Women who use or inject drugs face multilevel drivers that increase their vulnerabilities to HIV, HCV, and STIs. Despite advances in behavioral HIV prevention strategies for this population, most prevention studies have not sufficiently targeted dyadic, social, and structural levels. Few recent advances in biomedical HIV prevention have focused on women who use drugs and their unique needs.

Summary—HIV prevention strategies and services need to address the unique and multilevel drivers that increase the vulnerabilities to HIV, HCV, and STIs among women who use drugs including those who engage in sex work. Scaling-up and improving access to multilevel and combined HIV prevention strategies for these women is central to combating the HIV epidemic.

Keywords

drug use; female sex workers; HIV and STI risk; injecting drug use; prevention strategies; women

INTRODUCTION

Globally, HIV infection among women is escalating, especially among injection drug users (IDUs) in Eastern Europe, East Asia, and Central Asia [1,2,3[■],4,5[■]]. This trend is also

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Conflicts of interest

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apparent in other regions, even among women who use but do not inject drugs [6[■]]. The literature has documented a fairly recent emergence of noninjection drug use among women in several African countries [7[■]]. Sex disparities are noticeable, in that female IDUs are often at greater risk for HIV compared with male IDUs. A recent systematic review and analysis of 117 studies of drug users across 14 countries with an HIV prevalence of 20% or greater among drug users found a slightly higher HIV prevalence among female IDUs compared with their male counterparts (odds ratio=1.18, 95% confidence interval 1.10– 1.26) [8]. Studies have also highlighted the increased prevalence of the hepatitis C virus (HCV) among female IDUs including female sex workers (FSWs) [9–11].

Women who use drugs and those who engage in sex trading face individual, social, and structural drivers that increase their vulnerability to HIV and sexually transmitted infections (STIs) [3[■]]. The overlap between the IDU and FSW populations is considerable [6[■],7[■]]. Globally, approximately one-third of women who inject drugs turn to sex trading, which puts them at higher risk for both acquiring and transmitting HIV and STIs [12–14,15[■],16]. FSWs and their clients are population bridges for transmitting HIV to other partners [17].

This article examines studies published within the past 18 months (2010–2011) that were conducted with women who use or inject drugs including FSWs. This review concentrates on four major research areas: drug and sexual risk behaviors of women who use or inject drugs; multilevel drivers (individual, social, and structural) of HIV and STI risk; HIV prevention strategies; and implications for multilevel HIV prevention strategies needed to contain the HIV epidemic among women who use or inject drugs. This review is timely given the calls for action to move beyond individual behavioral prevention approaches to multilevel and combined strategies (behavioral and biomedical) for women who use or inject drugs.

DUAL RISKS AMONG WOMEN WHO USE OR INJECT DRUGS AND AMONG FEMALE SEX WORKERS

A number of recent studies have described dual HIV risks (drugs and sex) among women who use or inject drugs and among FSWs, including sharing contaminated needles and syringes [18], using crack cocaine, and using methamphetamines [19–21]. Risky sex behaviors include unprotected vaginal and anal sex [21–23] with regular or casual partners and sex-trading clients [14,24], sexual concurrency [19,20], and experiencing sexual abuse or rape by intimate partners and sex-trading clients [25[■], 26,27[■]].

In a study of the association between the practice of ‘flashblood’ (whereby an IDU injects herself with blood extracted from another IDU who recently injected) and HIV status among 169 female IDUs from Tanzania, McCurdy *et al.* [18] found that flashblood sharers were more likely to inject heroin and use contaminated rinse water than women who did not share. In a study conducted with 198 HIV-seropositive women, mostly crack cocaine users (80%) from three US cities, having a primary and casual sex partner more than doubled the risk of having an STI [28]. In another study, which compared South African adolescent female methamphetamine users ($n=261$) with nonusers ($n=188$), Wechsberg *et al.* [7[■]] found that young female methamphetamine users were six times more likely not to use condoms

compared with young women who used other drugs and were more likely to be sexually abused than nonmethamphetamine users. Female IDUs in St Petersburg, Russia, experienced multiple HIV risks from sharing needles, partner's drug use, and sexual risk with their main partners and sex trading partners [5[■]].

MULTILEVEL DRIVERS

The literature underscores that these intersecting HIV risks are influenced by multilevel drivers (individual, social, and structural) that affect women's vulnerabilities. These drivers operate dynamically and can shape behaviors within social contexts that are unique for women who use drugs [29[■]].

Individual drivers

Among individual drivers, studies have identified mental illness as a leading risk factor for HIV [30], including depression [31], psychiatric disorders [32–35], personality disorders [36], posttraumatic stress disorder (PTSD) [37], and complex trauma [25[■],38]. These mental health conditions may be a consequence of traumatic events, such as childhood sexual abuse [39,40], intimate partner violence (IPV), stigma, discrimination, poverty [3[■],4,41], exposure to community violence [4,41], and living a drug culture lifestyle [7[■],25[■],26,42].

Social drivers

Social and cultural drivers operate within the social networks and family and dyadic relationships, in which values, social norms, and attitudes are engendered, put into practice, and influence HIV risk [9]. Women who use or inject drugs are often stigmatized within their social network because their behavior contrasts with sex role norms and, as a result, they have low social status and are often considered sexually promiscuous or 'damaged goods'. Consequently, women are frequently victimized and seen as deserving of abuse [25[■], 27[■]].

In social dyadic contexts, women who use or inject drugs often rely on their partners to procure the drugs that they share, and women are often injected by their partners as second users when sharing drug equipment. Refusing to share needles and syringes can increase the risk of physical and sexual IPV, thus heightening the risk for HIV transmission [43]. Refusal to share needles could also result in loss of the woman's source of subsistence and income, and put pressure on her to engage in high-risk behavior [43]. The likelihood of engaging in risky behaviors increases as abuse and dependency on drugs increases [44]. FSWs who use drugs may be more likely to acquiesce to a client's demands for unprotected sex if they are under the influence of drugs or experiencing withdrawal [4].

Structural drivers

Although there has been a call for attention to 'risk environments' as a driver [4,29[■],45], only a handful of recently published studies have addressed this domain. Risk environments comprise structural factors exogenous to the individual that directly or indirectly act as barriers to, as well as facilitators of, individual HIV risk and prevention behaviors [4]. These factors include laws, policies, incarceration, criminalization of drug use, economic

conditions, poverty, sex inequality, sex-based violence, human rights violations [27[■],29[■], 46], and barriers to accessing HIV care, services, and drug abuse treatment [47–49].

A study by Chakrapani *et al.* [45] examined the risk behaviors and the structural contexts of risk among female and male IDUs in northern India, where injecting drug use is the major route of HIV transmission, and found that a number of structural contexts are associated with individual HIV risks. These included barriers to carrying needles and syringes because of fear of harassment by police and antidrug-use organizations, lack of sterile needles and syringes in drug-dealing locales, limited access to needles and syringes sold at pharmacies, inadequate coverage by needle and syringe exchange programs (SEPs), no availability of sterile needles in prisons, and withdrawal symptoms superseding concerns about health.

A study by Strathdee *et al.* [15[■]] among FSW IDUs in northern Mexico found that FSW IDUs who were HIV positive were more likely to have syphilis, often or always inject drugs with clients, and experience confiscation of syringes by police when compared to other IDU FSWs who were HIV negative. Miller *et al.* [50] examined structural vulnerabilities among FSWs in Vancouver, Canada, and found that younger FSWs (< 24 years old) were more likely to be homeless, work in public spaces, and not access methadone treatment programs (MTPs) than older FSWs, bringing attention to the need for structural interventions for youth, including sex-specific housing. A study by Epperson *et al.* [51] with 415 women receiving methadone treatment found that arrest and incarceration were significantly associated with a number of sex-risk behaviors, such as unprotected sex, having multiple sex partners, and sex with high-risk partners.

Each of these drivers has been found consistently in previous research to be a major impediment to risk reduction. Women who use drugs often have limited access to drug abuse treatment, MTPs, SEPs, voluntary counseling and testing (VCT), antiretroviral therapy (ART), and other HIV-related services, especially in low-resource settings and countries where drug use propels the epidemic [3[■]]. In addition, women who use drugs often avoid contact with the healthcare system, forgoing antenatal care, which reduces the opportunities to address critical health needs, including enrollment in ART to prevent mother-to-child HIV transmission [52]. Compounding the problem, drug abuse treatment and harm-reduction programs tend to be characterized by a lack of integrated care [53,54], and few programs are equipped to adequately address women's needs and vulnerabilities, such as IPV, pregnancy, and childcare [3[■],52,55].

MULTILEVEL HIV PREVENTION

HIV prevention and treatment strategies for women who use drugs include individual, group, structural, and biomedical approaches.

Individual-focused behavioral prevention

Individual-focused behavioral prevention approaches have included a number of core components such as skills building; negotiation of safer sex practices; promotion of condom use; serostatus knowledge and HIV testing; safety planning to deal with IPV; mental health; empowerment skills to help women access care, services, and employment [28,46,56–60];

and reducing PTSD symptoms [30,38]. Typically, these components are delivered in an individual or group modality and they were found to assist women in reducing sex and drug risks. However, the responsibility is principally placed on the woman to make changes in her social contexts and to convince her partner to engage in safer sex practices.

Social prevention

Although social level prevention strategies (e.g., couple-based, family, social network, community-based) for women who use drugs have been promoted, this review found that these approaches were rarely designed and tested in the recent literature. One social level HIV prevention strategy documented is a couple-based approach. Project Renaissance is an HIV prevention intervention for IDUs which was conducted in Kazakhstan [61]. This trial demonstrated the feasibility and preliminary effects of a dyadic HIV intervention in reducing sex-related and drug-related HIV risk. Couples who inject drugs, who participated together in four HIV skills building sessions, were significantly more likely to increase condom use and decrease unsafe injection acts at the 3-month follow-up than couples who received four health promotion sessions. A recent US study with 282 HIV-negative drug-using couples (564 individuals) found that at 12-month follow-up, there was a 41% reduction in the incidence rate of the number of unprotected sex acts with the intimate partner and a 39% reduction in the unprotected sex acts with other sex partners when the couple received the intervention together (seven sessions) compared with when one person received the same sessions alone [62]. Bringing couples together sends a message that the responsibility for HIV risk reduction rests with both partners and underscores that each partner may place the other at risk.

Structural prevention

Structural HIV prevention aimed at changing the social conditions and policies that affect the ability of women to protect themselves from HIV infection also remain limited in the literature that we reviewed. One study focused on microfinance strategies among FSWs in India, finding that participation in this economic intervention led to a higher income at 6-month follow-up, lower monthly earnings from sex work, and fewer sex partners and sex-exchange partners than the control group [63].

Biomedical prevention

The HIV field has witnessed striking biomedical advances – such as in the recent Center for the AIDS Programme of Research in South Africa trial, in which 1% tenofovir gel reduced HIV transmission by 39% and genital herpes by 51% [64]. In the HIV Prevention Trials Network (HPTN) 052 study, early initiation of ART reduced the transmission of HIV by 96% [65]. In the Partner's PreP study, daily tenofovir (TDF and TDF/FTC) reduced HIV transmission among serodiscordant couples by 62% among men and 73% among women [66]. Despite advances in biomedical HIV prevention strategies and ongoing research efforts [67], the number of women who use or inject drugs in these studies remains limited or unknown. Moreover, in this biomedical research, questions remain unanswered about the barriers to recruitment and adherence, as well as the engagement of women who use or inject drugs and FSWs. Although the recent findings on the efficacy of microbicides have

been mixed [68], women who use drugs and who engage in sex work are not fully included in this research.

The findings from modeling research demonstrate the significance of combination HIV prevention strategies (MTP, SEP, VCT, and ART) for IDUs at the population level in altering the course of the HIV epidemic [69]. Strathdee *et al.* [70] showed that in countries where HIV epidemics among IDUs are established or emerging, the benefits of these combination interventions were increased by structural interventions that optimized either access to or efficacy of these intervention components. This situation underscores the increased need to deliver effective prevention for women that includes both biomedical and multilevel behavioral prevention strategies.

CONCLUSION

Research stresses that understanding the local epidemic is the starting point for effective HIV prevention for women who use drugs. Addressing dual risks and providing combination, multilevel HIV prevention strategies are crucial to stop the epidemic [8]. This review of recent literature has shown progress in behavioral HIV prevention strategies targeting the individual, with a strong emphasis on women's unique needs, addressing IPV, relationship contexts, mental health, and improving skills to assist access to HIV care and treatment. For social prevention level approaches, this literature has produced limited evidence-based HIV prevention strategies targeting the community, social network, family, and service settings. Recent research describes some progress in couple-based HIV prevention for female drug users, but this modality also remains scarce [62[■]]. Structural level prevention addressing poverty, laws, and policies affecting the lives of women who use drugs also remains limited.

The literature underscores the need for public policies to fight discrimination and sex-based violence; to stop police mistreatment, arrest, and registration of female drug users; and to increase the access to HIV treatment and care. It also calls for increased funding to make drug abuse treatment and HIV services more available and friendlier to women by addressing sex-specific needs such as antenatal care, childcare, and prevention of IPV and trauma; and by protecting the human rights of women who use drugs [3[■]]. The literature acknowledges the need for a combination of behavioral and biomedical prevention strategies (e.g., SEPs, MTPs, ART, PreP, and microbicides) to optimize the HIV prevention impact. Overall, the research underscores that no single prevention strategy is sufficient to reduce HIV risk and that a multilevel prevention approach combining individual, social, structural, and biomedical prevention may be most efficacious.

Implementation and scale-up of evidence-based HIV prevention for women who use drugs must consider the unique social contexts and multilevel drivers of risk to ensure successful outcomes and sustainability of HIV-risk reduction efforts. Women vulnerable to HIV often do not have the political capital to ensure multitier changes to enhance their economic power. Until there is greater equality in global regions where women are at most risk for HIV, targeted and comprehensive combination prevention programs will need to address these disparities.

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KEY POINTS

- Multilevel drivers including individual, social, and structural level factors influence vulnerability to HIV and STI risk among women who use or inject drugs.
- The unique contexts and multilevel drivers that influence women who use or inject drugs, including sex workers, must be addressed in HIV prevention efforts among this population.
- Additional research is needed on dyadic, social, and structural level HIV prevention strategies and biomedical prevention among women who use or inject drugs.