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HIV, HCV and health-related harms among women who inject drugs: Implications for prevention and treatment

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Abstract

Introduction—While an estimated 3.5 million women inject drugs globally, women are outnumbered four to one by men who inject drugs and are often ignored or overlooked in the development and delivery of prevention and treatment services for this population. The current study aimed to identify key comorbidities prevalent among women who inject drugs (WWID), consider factors that contribute to vulnerability of this population and examine implications for prevention and treatment.

Methods—The literature was reviewed to examine the specific challenges and needs of WWID. We searched health-related bibliographic databases and grey literature to identify studies conducted among WWID, studies conducted among people who inject drugs (PWID) where results were disaggregated by gender and policies/guidelines/reports relevant to WWID.

Results—WWID face a range of unique, gender-specific and often additional challenges and barriers. The lack of a targeted focus on WWID by prevention and treatment services and harm reduction programs increases women's vulnerability to a range of health-related harms including blood borne viral and sexually transmitted infections, injection-related injuries, mental health issues, physical and sexual violence, poor sexual and reproductive health, issues in relation to child bearing and child care and pervasive stigma and discrimination.

Conclusions—There is a need to improve the collection and reporting of gender-disaggregated data on prevalence of key infections and prevention and treatment service access and program coverage. Women-focussed services and integrating gender equity and human rights into the harm reduction programming is a prerequisite if improvements in the health, safety and well-being of this often invisible and highly vulnerable population are to be achieved.

INTRODUCTION

Gender inequality refers to differential treatment and/or perceptions between individuals based on gender. Gender structures an individual's opportunities, social roles and

interactions and gender inequalities may help explain disparities in education, health, and economic participation among women globally. Indeed, a large body of literature identifies disparities in burden of disease and health outcomes among women¹. The World Economic Forum developed a framework for examining the magnitude of relative disadvantage of women compared to men, producing The Global Gender Gap Report annually since 2006. Although the gender gap has narrowed for some disparities in health and education, women's economic participation and political empowerment remains low².

An estimated 16 million people inject drugs globally³. Injection drug use exposes people who inject drugs (PWID) to a range of harms and adverse health outcomes, including the development of dependence, risk of overdose or injury while intoxicated and blood borne viral (BBV) and bacterial infections⁴. BBV infections are efficiently transmitted through direct percutaneous exposure to blood as a result of injection drug use and the disease burden associated with BBV infections among PWID is significant⁴. Global estimates suggest one in five PWID are infected with HIV³, one in two are chronically infected with hepatitis C virus (HCV) and one in ten are chronically infected with hepatitis B virus (HBV)⁵. Among HIV-infected PWID, HCV is the most common coinfection occurring in 70–90% of the population⁶, with almost universal HIV/HCV coinfection documented among PWID in some Asian and Eastern European countries⁷.

While there are no global population size estimates of the number of women who inject drugs (WWID), the proportion of women among populations of PWID ranges from 10–30% and is increasing⁸. Significant individual, social and structural factors negatively impact on the health of WWID⁹ and gender inequalities that result in increased BBV risk among women are well documented. PWID generally have low social status and face stigma and discrimination from the wider community. WWID experience increased stigma and discrimination, including from within drug using networks, due to gendered social norms and the role of women as primary care givers¹⁰. Increased stigma and discrimination results in greater barriers to access and lower rates of participation in harm reduction programmes¹¹, the sum of which results in an elevated risk for BBV infection among WWID⁸.

Of the estimated 3.5 million women inject drugs globally¹² around one in three (~1 million) participate in sex work, exacerbating the risk of transmission of HIV infection in this population⁹. In many settings, sex work is criminalised, with legal sanctions directed towards the women who engage in sex work rather than their clients, who are predominantly men¹³. Violence, or the threat of violence, is also a significant contributor to HIV and HCV risk behaviours among WWID, serving to undermine women's ability to practice safe sex and safer drug use with intimate partners¹⁴ and during sex work¹³.

Although the proportion of WWID is increasing⁸, women are outnumbered four to one by men who inject drugs. As a consequence, gender specific needs of WWID are frequently overlooked in the development and implementation of prevention and treatment services. With the exception of women who engage in sex work, research among PWID rarely examines the role gender inequality plays in exacerbating the risk of HIV, HCV and other health related harms among WWID. This paper aims to review and identify key

comorbidities prevalent among WWID and consider gender-related factors that contribute to vulnerability of this population. Implications for prevention and treatment are also discussed.

HIV AND HEPATITIS C VIRUS INFECTION

Since the discovery of HIV in the mid-1980s, the proportion of women living with HIV infection has increased from around one third to one half of the HIV-infected population globally¹⁵. Gender inequalities are a key driver of the HIV pandemic and WWID are particularly vulnerable to infection¹⁵. One in five PWID are estimated to be infected with HIV³. A recent review of HIV infection among PWID in 14 high prevalence countries found higher prevalence of HIV among women compared to men, although the overall effect size was modest¹¹. The review also identified considerable geographic variation, possibly related to gender inequality within settings and the degree of overlap between injection drug use and sex work. Higher HIV prevalence among WWID has been observed in several African countries¹⁶, with WWID two to ten times more likely to be infected with HIV than male PWID in Tanzania, Nigeria and South Africa¹⁷.

Hepatitis C virus (HCV) shares the same parenteral route of transmission as HIV and coinfection with HIV and HCV disproportionately affects PWID. Globally, an estimated 60% of PWID have been exposed to HCV⁵. Although mono-infected women are more likely to spontaneously clear the hepatitis C virus than men¹⁸, HIV coinfection reduces this likelihood. HIV coinfection also results in higher levels of viremia and accelerates the progression of liver disease, including fibrosis and cirrhosis¹⁹. Among populations of PWID, HCV treatment uptake is low, the vast majority of PWID treated are men and access to HCV treatment among PWID is predominantly restricted to those living in high income countries^{20,21}.

The early years of injection drug use pose an additional risk of blood borne viral infection for women. A number of studies conducted among young PWID have reported female gender as an independent predictor of exposure to HIV and/or HCV^{22–24}. Prospective cohort studies that have included recruitment of young WWID have documented HIV incidence of 5.3 per 100 person years (PY)²⁵ and high HCV incidence in the 35–42 per 100 PY range^{26,27} among this population. WWID are more likely to have a sexual partner who injects drugs, more likely to be initiated into injection drug use by male sex partners and more likely to be injected by others, including male partners^{20,28}. Further, women whose injecting partner is also a sexual partner have an elevated risk of incident HCV infection compared to women and men without overlapping partnerships^{24,29}.

As uptake and coverage of antiretroviral therapies (ART) to treat HIV improve, mortality among people living with HIV is increasingly due to non-HIV related comorbidities. However, PWID have poor access to ART³⁰ and HIV-infected PWID have increased age-matched morbidity and mortality compared with non-PWID³¹. In a recent study of medical comorbidities among HIV clinic attendees in the US, both female gender and injection drug use as the route of HIV transmission were independently associated with an increased number of chart-documented non-HIV-related comorbidities³². Moreover, medical and

psychiatric comorbidities are likely to negatively affect opportunities for successful HIV and HCV prevention and treatment among WWID.

HEPATITIS B VIRUS INFECTION

Hepatitis B virus (HBV) can be spread through both blood and body fluids, making WWID especially vulnerable to infection. Although prevalence varies by region, an estimated 40% of PWID have been exposed to hepatitis B virus (HBV) globally⁵ and an estimated 10% of HIV-infected PWID are co-infected with chronic HBV⁶. Estimates are higher in regions, such as South East Asia, where HBV is endemic in the general community⁵. In highly endemic settings, HBV infections predominantly occur during childbirth, when a chronically- infected woman passes infection to her infant during birth³³. Low health care utilisation among WWID makes antenatal screening of HBV difficult³⁴. Effective treatment of chronic HBV is possible, however, the long and often indefinite treatment duration and low availability in some settings create additional barriers for WWID to access treatment.

INJECTION-RELATED INJURY AND DISEASE

PWID are also at risk of a range of (non-BBV) injection related injuries and disease, such as abscesses, cellulitis, sepsis and endocarditis, that can lead to substantial morbidity and mortality. Up to one third of PWID report recent incidence of injection-related injury and disease^{35,36} and bacterial infections may account for up to one quarter of deaths among HIV-infected PWID³⁷. WWID are at increased risk of injection-related injury and disease^{35,36,38}. While this may be due to biological factors, such as less visible surface veins resulting in venous access issues for women³⁵, gendered social roles frequently dictate that it is men who control the purchase, preparation and administration of drugs and women who are more likely to be injected by others, including with previously used syringes³⁹.

MENTAL HEALTH

Substance-use can be treated using a multidisciplinary approach and opioid substitution therapy (OST) is an effective treatment for opioid dependence, including heroin dependence. Retention in OST is a predictor of long term virological success for HIV-infected PWID receiving antiretroviral treatment⁴⁰. However, women with substance use disorders are less likely to enter treatment than men⁴¹, despite a greater need for associated services (e.g. counselling, crisis management, medical referrals) once they have entered treatment programs⁴². Evidence suggests that WWID are more likely to suffer from emotional and psychiatric disorders than their male counterparts, including anxiety and affective disorders⁴³, depression⁴⁴ and post-traumatic stress disorders⁴⁵. Psychiatric disorders can negatively impact on psychosocial and cognitive functioning, with social isolation, homelessness and poor decision making processing potentially limiting the opportunities for WWID to engage in and sustain safer injection and sexual behaviour.

PHYSICAL AND SEXUAL VIOLENCE

Although not specific to WWID, a recent review documented a significant association between intimate partner violence (IPV) and HIV infection among women⁴⁶ and UNAIDS

recognises that women's vulnerability to HIV is influenced by violence caused by gender inequalities¹⁵. WWID experience high rates of IPV⁴⁷ and evidence suggests that not only do WWID experience high levels of violence from intimate partners, but also from acquaintances and strangers⁴⁸. For the one in three WWID who engage in sex work, there is a further risk of sexual and physical violence from their clients and law enforcement officers, with an elevated risk among women who engage in street-based sex work^{12,49,50}. In most parts of the world, some or all aspects of injection drug use and sex work are criminalized, leaving women who engage in these behaviours vulnerable to abuse with few legal protections¹³. Punitive policies are associated with police and law enforcement abuses, including physical and sexual violence against WWID¹⁶. Violence, or the threat of violence, is a significant contributor to HIV and HCV risk behaviours among WWID, including undermining women's ability to practice safe sex and safer drug use with intimate partners¹⁴ and during sex work¹³. Gender-related violence has also been linked to elevated rates of receptive sharing of needles and syringes among WWID¹² and women are reluctant to access harm reduction services where available⁸.

REPRODUCTIVE HEALTH, CHILD-BEARING AND CHILD CARE RESPONSIBILITIES

Injecting drug use is most prevalent during late adolescence and early to mid-adulthood, coinciding with a woman's child bearing years. As a result, WWID require access to a range of sexual and reproductive health services including contraception and pregnancy services, screening for and treatment of sexually transmitted infections (STI), and prevention of mother to child transmission. Vertical transmission of HIV is higher among women drug users than other populations of women living with HIV without a history of drug use⁵¹. Human papillomavirus (HPV) infection, and HPV associated genital warts and squamous cell cancers, are among the most common comorbidities among HIV infected women, with prevalence of HPV in the 40–90% range^{52,53}. Further, HPV infections that occur in HIV immunosuppressed women are more persistent and difficult to treat⁵³. Some studies have identified under-utilization of female controlled contraception among WWID and high rates of pregnancy, including unwanted pregnancy and abortion^{54,55}. Because opiate use and poor nutrition can cause amenorrhoea, some women are not aware that they are pregnant for several months increasing the likelihood of poor birth outcomes for mother and child³⁴.

While the criminalization of drug use affects access to prevention and treatment services by all PWID, many laws, policies and practices differentially impact WWID. For example laws in many countries indicate drug use as a criteria for loss of child custody, coerced sterilisation or abortion and policies such as drug user registration may deter women from accessing services for fear of notification and loss of child custody. In many settings globally WWID face a significant risk that disclosure of injection drug use will result in notification to child protection authorities and that their children will be removed from their care⁵⁶. Due to the illicit nature of injecting drug use, WWID are at significant risk of involvement with law enforcement agencies and face separation from their children if they are detained or incarcerated³⁴. The number of women incarcerated for drug offences is increasing globally, with the female prison population in Latin America almost doubling

between 2006 and 2011 and between 60 and 80% of women imprisoned for drug-related offences^{57,58}. Among prisoners with a sentence of more than 12 months admitted to US state prisons in 2012, one in three women were admitted for drug offences compared to one in seven men⁵⁹. Further, more than two-thirds of women in US federal prisons are serving sentences for non-violent drug offences and most of these women are single mothers¹⁶. The prevalence of blood borne viral infections and STIs is often higher among women in prison than in the community and women prisoners experience more health problems than their male counterparts⁶⁰. However, in most countries, harm reduction and drug treatment, including OST, are not available in women's prisons⁶¹. Women in closed settings, including mandatory rehabilitation centres, are especially vulnerable to gender-based violence⁶².

SEX WORK

Poverty and economic forces make survival sex work a viable option for some WWID, and globally, around one in three WWID are estimated to participate in sex work⁹. Among female sex workers, HIV prevalence is estimated at 12%, although prevalence varies by geographic area depending on the structure of sex work and the overlap between sex work and injection drug use⁶³. In addition to an increased risk of HIV infection, sex work also places WWID at increased risk of chlamydia, herpes and other sexually transmissible infections (STIs)¹³. Moreover, WWID who engage in sex work are frequently in a position where they have little option other than to participate in high risk forms of sex work as they are often excluded from brothels and are more likely to engage in riskier street-based sex work³⁴. Many have financial pressures to support their own, and sometimes their partners, drug use. Moreover, decision making while working may be influenced by the effects of drug use, including withdrawal and intoxication, making it even more difficult for women to negotiate the risks associated with sex work.

STIGMA AND DISCRIMINATION

PWID generally have low social status and face stigma and discrimination from the wider community, including from health professionals. WWID frequently experience additional, stigma and discrimination, including from within drug using networks, due to gendered social norms and the role of women as primary care givers⁹. The greater stigma faced by women drug users places WWID at higher risk of HIV and other blood borne viral infections and limits treatment uptake⁸. In some settings, services require women drug users to obtain permission from, or be accompanied by, male partners in order to access drug treatment⁸. Women drug users also face discrimination in terms of illegal or informal work with studies documenting gender segregation in the drug economy⁵⁶. For WWID who have children in their care, rather than receiving support and assistance, stigma and discrimination can intensify. The prevalence of injecting drug use is also high among women prisoners and women who have been in prison are often discriminated against and unable to return to their communities after being released. Experiences of stigma and discrimination are also associated with poorer mental and physical health⁶⁴. Such marginalization reinforces the vulnerability of WWID and increases their susceptibility to a range of comorbidities.

IMPLICATIONS FOR PREVENTION AND TREATMENT

Although an estimated 3.5 million women inject drugs globally¹², women are outnumbered four to one by men who inject drugs and are often ignored or overlooked in the development of prevention and treatment services. The invisibility of WWID and the lack of gender-specific services is compounded by a lack of data on WWID. Only 15 of the 84 countries reporting to UNAIDS in 2012 reported HIV prevalence among WWID and despite this being specifically recommended in the joint WHO/UNODC and UNAIDS Technical Guide⁶⁵, most countries still do not collect gender-disaggregated data on Needle and Syringe Programs (NSP), OST or ART⁶⁶. This lack of data is symptomatic of gender-blind service delivery, where gender inequalities are not acknowledged nor addressed. The collection of gender-disaggregated data must be prioritised to enable an initial assessment of the availability and accessibility of HIV prevention and treatment interventions among WWID.

A second priority requires services to recognise the role of gender and develop policy and practice that aim to redress gender inequality. A lack of focus on gender represents missed opportunities to address health disparities among WWID. NSP and OST are often tailored towards, and sometimes primarily or exclusively focused on men who inject drugs⁸. Relatively few OST services have programs specifically designed to encourage and support women who are parents or who are pregnant, despite significant proportions of women on OST being parents and pregnancy frequently being reported as motivator to enter drug treatment⁶⁷. NSP and OST must also integrate or develop strong referral pathways to link women into ancillary health care, such as sexual, reproductive, maternal and child health services, so that key comorbidities among WWID can be addressed. Gender-sensitive services must guarantee the personal safety and confidentiality of WWID and provide appropriately-trained staff. They must also consider the provision of women-only spaces, childcare and interventions for women involved in sex work and women with a history of physical and sexual violence. WWID must also be empowered to have meaningful involvement in the development and delivery of services, including through the employment of female peers.

Fundamental harm reduction interventions, such as NSP and OST, have the potential to be highly acceptable to WWID but these evidence-based interventions must be scaled up, universally adopted and provided with sufficient resources to enable the development of gender-sensitive service provision. Gender-sensitive NSPs are extremely rare. Although some service that specifically target women have integrated NSP service provision, for example residential or sex worker outreach services, these interventions are rarely evaluated. There is a growing body of literature that aims to evaluate gender-sensitive drug-treatment services, however, study populations generally include a broad range of substance-using women, not all of whom inject. OST services that are designed specifically for pregnant women are an example of an evidence-based gender-sensitive harm reduction intervention. However, even in countries with well-developed and comprehensive service provision, considerable variability and sub-optimal prescribing has been identified^{68,69}.

Consideration of gender in the development and implementation of services for PWID can only be achieved by the meaningful involvement of women in the design and delivery of services. WWID have particular needs and risk factors that differentiate them from men who inject drugs. They face additional and unique challenges in drug using communities as well as in the broader society. However, while policy makers need to improve the acceptability, availability and accessibility of services for WWID, globally men retain the economic and political power in society. Gender disparities in education, health literacy, employment and socioeconomic status need to be overcome before power dynamics shift in favour of WWID. Integrating gender equity and human rights into the harm reduction programming is a prerequisite if improvements in the health, safety and well-being of this often invisible and highly vulnerable population are to be achieved.

Policies that encourage women to seek harm reduction and drug treatment services have greater individual and social benefit than criminalisation and punitive drug policies that differentially impact on WWID, particularly those who are pregnant or have children⁸. Monitoring and evaluation of the nine harm reduction components identified in the WHO, UNODC & UNAIDS comprehensive package of interventions to prevent HIV and HCV among PWID⁶² must include gender-disaggregated data so that access and availability among WWID can be assessed. Recently released policy documents include a Global Fund checklist for integrating gender into funding models to fight AIDS, TB and Malaria⁷⁰ and a UNODC Policy Brief on the specific needs and vulnerabilities of WWID⁸. Harm reduction services must now recognise and acknowledge gender inequalities and move towards gender-sensitive service provision.

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