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Prevalence and Correlates of HIV Infection in a Cohort of Male Injection Drug Users in Delhi



India has one of the largest injecting drug user (IDU) populations in the world, estimated at 177,000 nationally and 17,000 in Delhi alone.^{1,2} Injection practices such as needle sharing and drawing up drugs from a common container, and high-risk sexual behaviours such as having multiple partners and unprotected sex fuel the HIV epidemic among IDUs as well as their injecting and sex partners.

Reducing sexual and injection risk behaviours is critical to controlling the HIV epidemic among IDUs and their sex partners. Evidence indicates that HIV-positive IDUs reduce transmission behaviours upon learning their HIV status.³⁻⁷ Thus, HIV testing offers an entry point into targeted services for IDUs that may reduce risk behaviour. The Population Council, in collaboration with the Sahara Centre for Residential Care and Rehabilitation (Sahara) and *Arise—Enhancing HIV Prevention Programs for At-Risk Populations* is implementing a project to avert HIV infections among IDUs and their sexual and

injecting partners in Delhi by increasing the uptake of HIV counselling and testing (HCT) and increasing HIV prevention and harm reduction service coverage. As part of the evaluation for this project, we conducted a baseline assessment of HIV infection among male IDUs to understand the correlates of HIV infection and high risk injection practices and sexual behaviour among male IDUs.

Study Methodology

The baseline assessment was undertaken from May to October 2011 at five sites within Delhi. The sites were operated by Sahara Centre for Residential Care and Rehabilitation. Participants were recruited through peer-referral, targeted outreach by outreach workers, and walk-ins. To be eligible, participants had to be at least 18 years of age, residing in and around Delhi, and injected at least once in the last three months. Trained research interviewers administered



a close-ended questionnaire in Hindi to collect data on socio demographic characteristics, injecting practices, sexual behaviours, knowledge of HIV and utilization of harm reduction services. All participants were offered HIV testing based on three rapid tests per national HIV testing guidelines.

Study Population

A total of 3,792 males, including 10 transgenders, and 26 females were recruited into the study. Overall, 53.6 percent of the IDUs were recruited through targeted outreach, 26.3 percent through peer referral and 20.1 percent were walk in clients. Due to the small numbers recruited, female IDUs were not included in the analysis.

The median age was 30 years, 52.1 percent were never married, and 56.9 percent were less than 30 years of age. About one-half (48.9 percent) were illiterate, 56.3 percent were daily wage earners, and 27.5 percent were self-employed. IDUs were primarily either living in a family/relative's home (43.1 percent) or in the street, slum or public area (40.3 percent).

Key Findings

High acceptability of HIV testing among the IDUs

Almost all (95.4 percent) of male IDUs were tested; only 175 remained untested due to refusal or blood draw not being possible. Only 37.6 percent had previously been tested for HIV. Even more worrisome is that one-half (52.5 percent) of those who tested HIV positive in this study had never been tested before.

High prevalence of HIV among the IDUs

HIV prevalence amongst those tested was 21.9 percent. This is a much higher prevalence of HIV infection than the 10 percent reported by the sentinel surveillance conducted in Delhi in 2006 and higher than the national HIV prevalence estimates (9.2 percent) for IDUs in 2010.⁸ The HIV prevalence of 21.9 percent is similar to the self-reported HIV prevalence we documented in our previous study among male IDUs in Delhi in 2006.⁹

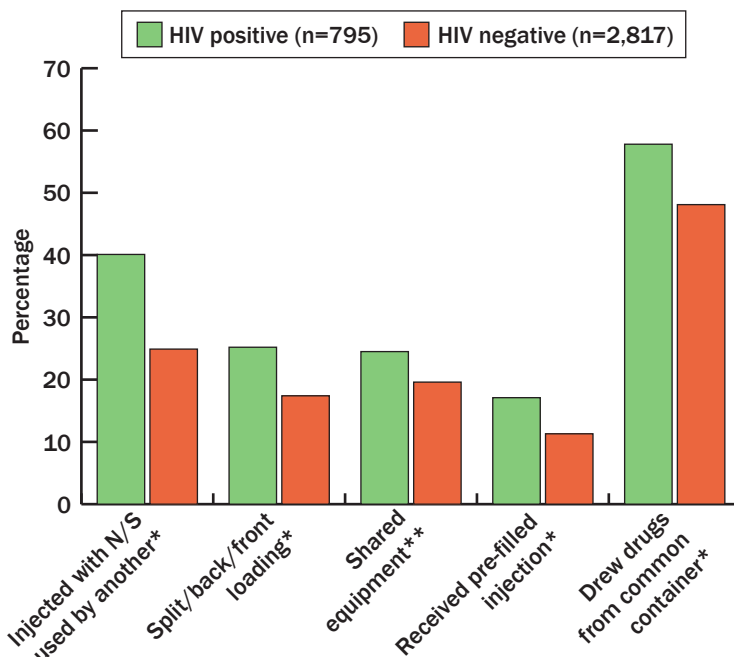
HIV-positive IDUs were more likely to report high risky injecting drugs behaviour compared to HIV-negative IDUs

HIV-positive participants were more likely to have been using drugs (injecting and non-injecting) drugs for longer periods than HIV-negative IDUs; 53.3 percent HIV-positive IDUs were using drugs for more than 11 years compared to 46.9 percent of HIV-negative participants ($p < 0.001$). HIV-positive male IDUs were also more likely to report unsafe injection practices in the last one month compared to HIV-negative male IDUs (Figure 1). HIV-positive IDUs were also more likely to access harm reduction services, particularly needle and syringe exchange program (NSEP) services (45.3 percent vs. 30.1 percent; $p < 0.001$), compared to HIV-negative IDUs.

Lower sexual activity reported by HIV-positive IDUs compared to HIV-negative IDUs

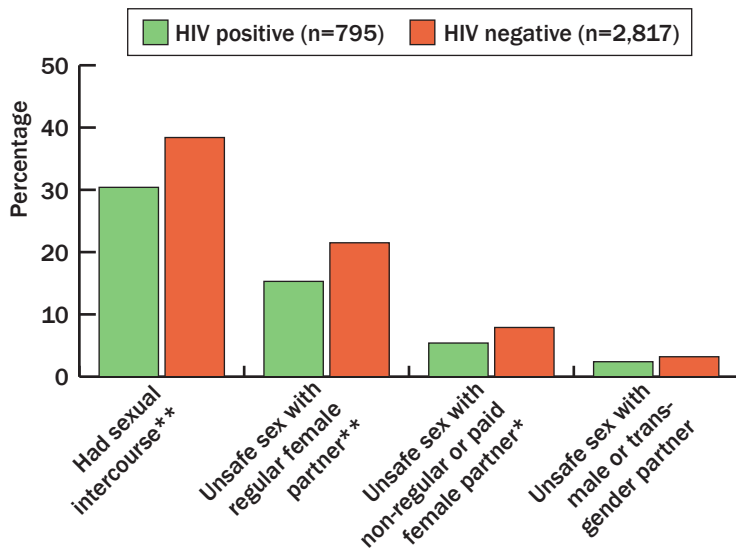
Overall sexual activity was low; 36.6 percent of participants reported sexual intercourse in the last three months. HIV-positive IDUs were less sexually active, and reported unsafe sex with male and female partners less frequently than HIV-negative IDUs (Figure 2). A fairly high proportion (15.3 percent) of HIV-positive IDUs reported unsafe sex with a regular female partner.

Figure 1 Injection behaviours of HIV-positive and HIV-negative male IDUs in Delhi, 2011



* $p < 0.001$; ** $p < 0.01$

Figure 2 Sexual behaviours in the last three months of HIV-positive and HIV-negative male IDUs in Delhi, 2011



*p < 0.05; **p < 0.001

Injection drug use behaviours were the dominant risk factors for HIV infection compared to sexual behaviours

In multivariate analysis, after controlling for demographic variables, those who had been using drugs (non-injecting or injecting) longer, engaging in high-risk injection practicesⁱ, and having accessed harm reduction servicesⁱⁱ were more likely to be HIV infected. Alternatively, those who drank alcohol more frequently and engaged in unsafe sex with female partners (compared to those not having any sex with a female partner) were less likely to be HIV infected.

Program Implications and Recommendations

The results of the baseline assessment as a part of the longitudinal study highlighted some key issues for HIV prevention program in Delhi. In spite of a massive scale up of HIV counselling and testing services, the study reveals that less than 40 percent participants reported prior HIV testing despite having accessed

ⁱAn index was created for risky injection practices. The index includes (i) Using used needle or syringe; (ii) Back/front loaded/split drugs; (iii) Shared vial/cooker/container/cotton/filter/water; (iv) Received pre-filled injection; (v) Drew up drugs from common container.

ⁱⁱHarm reduction services include NSEP services, abscess care, de-addiction services and opioid substitution therapy.

other facilities such as abscess care and NSEP. Targeted intervention programs for IDUs require HIV testing for IDUs at six month intervals.¹⁰ Further, one-half of those who tested positive in this study had never been tested previously. Undiagnosed HIV infection impedes the prevention efforts and access to treatment and care for HIV-positive IDUs. It is imperative that prevention programmes emphasize and facilitate HIV testing in this population.

We found that unsafe injection practices were reported more frequently by HIV-positive IDUs. Information, education and counselling needs to be strengthened to emphasize safer injecting practices.

Table 1 Correlates of HIV-positive status among male IDUs in Delhi, 2011

Variable	Multivariate adjusted odds ratio	95% confidence interval
Time since initiating drug use		
≤1 year	1.00	
2-5 years	2.02	1.09-3.73
6-10 years	2.81	1.55-5.11
≥11 years	3.35	1.84-6.11
Risky injection behaviour in last one month (5-item)^a		
No	1.00	
Yes	1.60	1.33-1.91
Utilized services in last 3 months^b		
No	1.00	
Yes	1.32	1.11-1.58
Current alcohol use (average)		
Never	1.00	
≤2 times/week	0.67	0.55-0.82
≥3 times/week	0.74	0.54-1.01
Prior HIV testing		
No	1.00	
Yes	1.60	1.35-1.91
Unsafe sex with any female partner in last 3 months^c		
No sex	1.00	
Safe sex	1.90	0.66-1.21
Unsafe sex	0.69	0.55-0.86

Model is adjusted for age, education, marital status, religion, regional origin, accommodation, and income.

^aIncludes: (i) Using used needle or syringe; (ii) Back/front loaded/split drugs; (iii) Shared vial/cooker/container/cotton/filter/water; (iv) Received pre-filled injection; (v) Drew up drugs from common container.

^bIncludes needle and syringe exchange program services, abscess care, de-addiction services and opioid substitution therapy.

^cIncludes regular, non-regular or paid.

Indeed, we found that HIV-positive IDUs were more likely to access NSEP services. Utilization of NSEP services does not necessarily translate into safe behaviours as HIV-positive IDUs were more likely to report unsafe injection practices. HIV-positive IDUs also reported more frequent injections and thus would require a larger supply of needles and syringes. It is possible that while HIV-positive IDUs were more likely to access NSEP services, it may not be possible for them to obtain a sufficient supply of clean needles. Programs need to ensure that HIV-positive IDUs are getting sufficient supply of sterile needles and syringes and that they are in fact using them.

It is of concern that nearly one out of five HIV-positive IDUs reported unsafe sex with a regular female partner. The risk of onward HIV transmission to a sex partner remains high. Therefore, it is critical for HIV prevention programmes for IDUs to include their sex partners (regular and non regular partners).

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