Sexual Transmission of HIV and Possible Underreporting of Injection Drug Use in Kazakhstan

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Background

As of January 1, 2014, 59.8% of all confirmed HIV cases in Kazakhstan were among people who inject drugs (PWID), based on data from self-reported injection drug use collected during routine HIV case surveillance. While injection drug use remains the primary mode of HIV transmission, concerning trends in data suggest a steady increase in self-reported heterosexually transmitted HIV, possibly among sex partners of PWID. To better understand these trends, we conducted a survey among sex partners of PWID in Kazakhstan.

Methods

A cross-sectional survey was conducted in a convenience sample of sex partners of PWID to determine HIV and hepatitis C (HCV) seroprevalence and to identify factors associated with HIV infection. Sex partners were referred by PWID that were recruited through a routinely conducted national integrated bio-behavioral survey (IBBS) or by PWID visiting community-based HIV services in Karaganda, Temirtau, Ust-Kamenogorsk and Kostanai (cities reporting the highest rates of sexually transmitted HIV infections in Kazakhstan). Reporting no current (within the preceding 12 months) injection drug use was an exclusion criterion. Behavioral data were collected through semi-structured interviews. Dried-blood spots were obtained and tested for HIV and HCV using ELISA. Multivariate analyses were conducted using repeated measures logistic regression modeling to identify factors independently associated with HIV (and HCV), while adjusting for potential clustering in participants and their recruiter.

Results

A total of 1,125 participants completed the survey, including 214 men (19%) and 911 women (81%) whose age ranged from 18 to 57 years with a median and mean of 32 years. HIV prevalence in participants was 9.3% in men and 7.0% in women (p=0.25). HIV prevalence was significantly lower among those who reported no history of injecting drug use (5.2%) versus those who had ever injected drugs in the past (16.9%) (p<0.001). HCV prevalence was high (63% among those who had ever injected drugs in the past and 16.8% among those who reported no history of ever injecting drug use, p<0.001). However, only 58.2% of HCV-positive men and 41.1% of HCV-positive women (p<0.001) reported prior history of injecting drug use, suggesting underreporting of injecting behavior (Figure 1). Prevalence of HIV-HCV co-infection was 3.9% overall, 12.3% among those who had injected drugs in the past and 1.9% among those who reported no history of injecting drug use. HIV prevalence was significantly lower (4.8%; p<0.001) in participants who were HCV-negative compared to HCV-positive respondents (15.2%) (Figure 2).

Results (*continued*)

In multivariate analyses, two factors emerged as being significantly associated with the risk of HIV infection among all participants: having an HIV infected sexual PWID partner by self-report (OR=5.2, 95%CI=1.6-16.4) and by linkage to data on referring PWID through IBBS (OR=4.6, 95%CI=2.2-9.6) and a history of ever injection drug use i.e. prior to the 12 months preceding the survey (OR=4.6, 95%CI=2.3-9.2). In a subset of participants who were HCV-negative and had no history of injecting drug use, factors significantly associated with the risk of HIV infection were: having an HIV infected sexual PWID partner (using linked data from the IBBS among referring PWID) (OR=5.6, 95%CI=1.6-19.1), and having more than one sex partner during the last 12 months preceding the survey (OR=3.9, 95%CI=1.1-14.7).

Figure 1. Reported history of injecting drug use for HCV-positive respondents, by gender

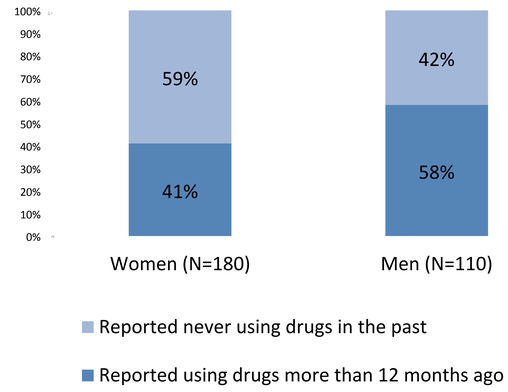
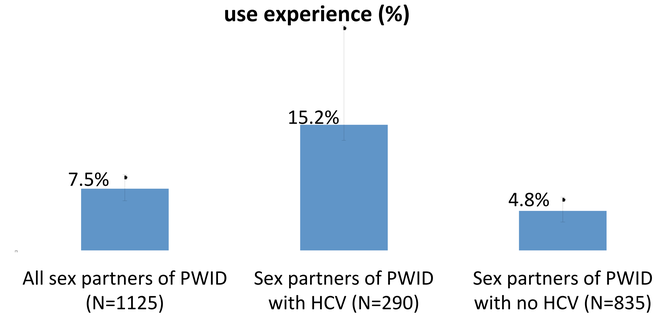


Figure 2. HIV prevalence among all sex partners of PWID surveyed and those with no HCV and no drug use experience (%)



Conclusion

HIV prevalence in sexual partners of PWID is significantly higher than in general population in Kazakhstan (less than 0.1%). HCV prevalence in sex partners of PWID reporting no history of injecting drug use is also significantly higher than in general population (2-4%) suggesting possible underreporting of previous or current injecting drug use likely due to stigma, especially among women. Thus, increases in HIV infection reported as sexually-acquired may partially represent underreported injecting drug use. Programs for prevention of sexual transmission of HIV should target PWID and their sex partners and address safer injecting drug use and sex in both groups. Use of HCV testing can bring additional benefits and allow cross-checking and verification of self-reported data on injecting drug use during HIV case surveillance activities.

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