Correlates of selling sex among male injection drug users in New York City

Kathleen H. Reilly [a,*], Alan Neaigus [a], Travis Wendel [b], David M. Marshall IV [c], Holly Hagan [d]

[a] HIV Epidemiology Program, New York City Department of Health and Mental Hygiene, 42-09 28th Street, Long Island City, NY 11101, USA
[b] St. Ann's Corner of Harm Reduction, 310 Walton Ave., Bronx, NY 10451, USA
[c] Department of Anthropology, John Jay College of Criminal Justice, 899 10th Ave., New York, NY 10019, USA
[d] College of Nursing, New York University, 726 Broadway, New York, NY 10003, USA

ABSTRACT

Background: Compared to female IDUs, the correlates of receiving money, drugs, or other things in exchange for sex ("selling sex") among male IDUs are not well understood.
Methods: In 2012, IDUs were sampled in New York City for the National HIV Behavioral Surveillance cross-sectional study using respondent driven sampling. Analyses were limited to male participants. Logistic regression was used to calculate crude and adjusted odds ratios (aOR) and 95% confidence intervals (95% CI) to determine the correlates of selling sex to (1) men and (2) women in the past 12 months.
Results: Of 394 males, 35 (8.9%) sold sex to men and 66 (16.8%) sold sex to women. Correlates of selling sex to men included bisexual/gay identity (aOR: 31.0; 95% CI: 8.1, 119.1), Bronx residence (vs. Manhattan) (aOR: 38.1; 95% CI: 6.2, 235.5), and in the past 12 months, being homeless (aOR: 9.9; 95% CI: 2.0, 49.6), ≥3 sex partners (aOR: 26.2; 95% CI: 4.7, 147.6), non-injection cocaine use (aOR: 5.4; 95% CI: 1.6, 18.2), and injecting methamphetamine (aOR: 36.9; 95% CI: 5.7, 240.0). Correlates of selling sex to women included, in the past 12 months, ≥3 sex partners (aOR: 14.6; 95% CI: 6.6, 31.9), binge drinking at least once a week (aOR: 3.1; 95% CI: 1.6, 6.1), non-injection crack use (aOR: 3.3; 95% CI: 1.6, 6.7), most frequently injected "speedball" (vs. heroin) (aOR: 2.1; 95% CI: 1.1, 4.2), and receptively shared syringes (aOR: 2.4; 95% CI: 1.2, 4.8).
Conclusions: Among male IDUs, those who sold sex had more sex partners, which may facilitate the sexual spread of HIV among IDUs and to non-IDU male and female sex partners. HIV prevention interventions aimed at male IDUs who sell sex should consider both their sexual and parenteral risks and the greater risk of engaging in exchange sex associated with the use of injection and non-injection stimulant drugs.

© 2014 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

The availability of syringe exchange programs and the legalization of selling syringes at pharmacies without a prescription in New York City has correlated with a reduction in the number of new HIV infections among injection drug users (IDUs) (Des Jarlais et al., 2005). The risk of HIV infection from contaminated syringes is thought to have declined over time, however the risk from sexual transmission has increased among IDUs and many IDUs engage in both injection equipment sharing and sexual risk behaviors (Des Jarlais et al., 2009; Neaigus et al., 2013). The results of a 2011 study of HIV, hepatitis C, and herpes simplex virus type 2 among IDUs in NYC suggest that most recent HIV infections among IDUs occurred through sexual transmission rather than from injection drug use (Des Jarlais et al., 2011). IDUs may also serve to bridge the HIV epidemic to the general population. In a NYC study, HIV infection among heterosexuals with no history of injecting drugs was associated with having sexual partnerships with IDUs (Jenness et al., 2010).

Those who exchange sex for things including drugs or money ("sell sex") have been shown to be at greater risk for HIV and STIs (Dunkle et al., 2004; Rolfs et al., 1990; Rudolph et al., 2013). Exchange sex has previously been found to be associated with HIV infection among high-risk heterosexual men in NYC (Jenness et al., 2011). Those who sell sex may be incentivized to not use condoms (Jie et al., 2012) may have greater numbers of sex partners (Edwards et al., 2006), and may have more risky sex partners (Weber et al., 2002). Exchange sex has been found to be common among female

IDUs (Astemborski et al., 1994; Davey-Rothwell and Latkin, 2008) and the majority of research concerning exchange sex has focused on females selling sex. By contrast, there is little literature available on the prevalence of exchange sex among male IDUs, and studies of exchange sex among drug-using men have mostly focused on men who have sex with men (MSM) (Newman et al., 2004; Semple et al., 2010). Male IDUs that sell sex are considered to be at increased risk for HIV infection compared to male IDUs that do not sell sex (Kuyper et al., 2004). Potential correlates for selling sex among male IDUs include age, polydrug and alcohol use, high risk sexual behavior (high number of sex partners and sex without a condom), homelessness, and HIV positive status (Edwards et al., 2006; Kuyper et al., 2004; Latkin et al., 2003; Salazar et al., 2007; Wood et al., 2007).

The current study examines the prevalence and correlates of selling sex among a sample of male IDUs in NYC.

2. Methods

2.1. Study population

Participants were recruited to participate in the Center for Disease Control and Prevention (CDC)-sponsored National HIV Behavioral Surveillance (NHBS) study of injection drug users (IDU) in NYC from August to November of 2012. NHBS is an ongoing national, cross-sectional study sponsored by the CDC that monitors HIV risk behaviors, testing history, exposure to and use of HIV prevention services, and HIV prevalence among men who have sex with men (MSM), IDU, and high-risk heterosexuals (HET) in three-year cycles (Gallagher et al., 2007; Lansky et al., 2007). NHBS is conducted in collaboration with the CDC by local public health departments, universities, and other organizations.

Respondent-driven sampling (RDS) was used for participant recruitment. RDS has been shown to be effective at reaching hidden populations, for which no sampling frame exists, where individuals are connected by strong social networks (Heckathorn, 2007). Ethnographers selected 12 initial recruits ("seeds") through community outreach. Eligibility criteria for the study were having injected drugs without a prescription in the past 12 months (participants must have had physical signs of recent injection [fresh track marks, needle-sized scabs, or abscesses] or sufficient knowledge of drug preparation, injection, and syringes), at least 18 years of age, NYC residence, and English or Spanish comprehension. Additionally, seeds were required to identify as either male or female and not transgender. Once the seeds completed the interview and testing, they were asked to recruit up to three peers. Non-seed participants had to be referred into the study by other participants. Potential participants who were referred to the study were screened for eligibility. Those who were screened as eligible and provided their informed consent were given a structured survey interview administered in private by trained interviewers and were offered voluntary HIV, hepatitis B, and hepatitis C tests, and were provided with up to three coupons for peers they could refer to the study. Successive waves were recruited until the desired sample size was reached. Subjects were compensated $20 for completing the survey, $10 for testing for HIV, $10 for testing for hepatitis B and C, and $10 for each eligible participant recruited. All study procedures involving human subjects were approved by the New York City Department of Health and Mental Hygiene (DOHMH) and John Jay College of Criminal Justice Institutional Review Boards.

2.2. Measures

The survey instrument was developed by the CDC in collaboration with local NHBS project sites. Interview data were collected on demographics; sexual behavior with main and casual partners; alcohol and drug use history; HIV testing experiences; medical history; and exposure to HIV prevention activities. Questions pertaining to sexual behavior were framed in terms of behaviors in the past 12 months and at last sex; questions pertaining to drug use were framed in terms of the past 12 months and last syringe-sharing event. Participants were asked if they had ever received "things like money or drugs" in exchange for sex in the past 12 months from any of their main or casual, male or female, sex partners. For the purpose of characterizing the direction of the exchange, this manuscript refers to receiving things in exchange for sex as "selling sex" even though this exchange does not necessarily indicate a monetary transaction. For those participants who reported multiple male or female, main or casual, partners in the past 12 months, participants were asked for each "how many gave you things like money or drugs in exchange for sex?"; for those who reported one male or female, main or casual, partner in the past 12 months, participants were asked did this partner "give you things like money or drugs in exchange for sex?" (yes/no). Participants were considered to have sold sex if they reported that at least one partner gave them things like money or drugs in exchange for sex. Separate variables were created for selling sex to female partners and male partners, respectively. Phlebotomists collected blood specimens using venipuncture. Specimens were screened for HIV antibody on HIV1/2 enzyme-linked immunosorbent assay (ELISA) and confirmed using HIV1 Western blot platforms (Bio-Rad Laboratories, Hercules, CA, USA). Hepatitis C infection was determined using chemiluminescence immunoassay (CIA) (VITROS Anti-HCV assay, Ortho-Clinical Diagnostics, Raritan, NJ, USA). Participants were asked to return in 2 weeks for their test results.

2.3. Statistical analysis

Weighted and unweighted frequencies were compared and differences were considered significant if their 95% confidence intervals did not overlap (Niccolai et al., 2010). Data were weighted to reduce recruitment biases common in chain-referral methods (preferential in-group recruitment [homophily] and large network sizes; Heckathorn, 2007). Estimates of participants' network sizes were determined through self-report by asking separately how many males and females they know who inject and whom they have seen in the past 30 days; the total of male and female IDUs known by participants was considered their IDU social network size. Weights were generated using RDS Analysis Tool (RDSAT) 7.1 (Ithaca, NY, USA). Analyses were restricted to non-seed males. Medians and interquartile ranges (IQR) for non-normal continuous data, and frequencies and unweighted and weighted percentages and 95% confidence intervals (CI) for each level of categorical variables were calculated.

RDS is a relatively new sampling method and analysis techniques are still being developed (Heckathorn, 1997). RDS weighted estimates may not be generalizable to the target population if assumptions are not met and large sample sizes may be needed to obtain precise weighted estimates (Salganik, 2006; Wejnert et al., 2012; White et al., 2012). Methods incorporating weights in regression models are still under development (Johnston et al., 2008; Winship and Radbill, 1994). Associations between selected variables and (1) selling sex to men in the past 12 months and (2) selling sex to women in the past 12 months were examined through the estimation of crude and adjusted odds ratios (respectively, OR and aOR) and 95% confidence intervals (95% CI) using unweighted logistic regression models. Variables significant ($p < 0.1$) in bivariate analyses were considered for inclusion in the multivariate logistic regression models. Variables were eliminated from multivariate models using stepwise selection with $p < 0.1$ for entry and $p < 0.05$