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Injection and sexual risk practices among young heroin users in Hanoi, Vietnam

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Abstract

Epidemiological data in Vietnam shows high HIV prevalence rates among injection drug users, especially in urban centres. However, there are limited data on specific practices used to prepare and inject drugs or on sexual practices among Vietnamese injectors. A street-based cross-sectional interview was conducted with 862 heroin injectors in Hanoi, Vietnam, to collect such data. Variability was seen in both injection and sexual risk, with 12.9% of current injectors reporting at least one unsafe method of drug sharing and 57.1% reporting unsafe sex in the past 30 days. These risks were strongly associated with those who engaged in unsafe injection significantly more likely to engage in unsafe sex (69.4% vs. 55.3%) and those engaging in unsafe sex significantly more likely to engage in unsafe injection (15.7% vs. 9.2%). These findings highlight the overlap of injection and sexual risk practices among Vietnamese heroin users and suggest the need for strong, broadly targeted HIV prevention activities among this population.

Keywords

Heroin; injection drug use; sexual risk; youth

Introduction

Since its first reported case in 1990, Vietnam has seen a sharp increase in cases of HIV, with an estimated 249,660 cumulative infections and more than 197,000 persons living with HIV/AIDS at the end of 2011 (UNAIDS, 2012). Although sexual transmission is increasing, high-risk injection practices account for 60% of all reported cases of HIV in Vietnam (FHI, 2007). Prevalence among IDUs nationwide has been slowly declining since 2004, and was 13.4% in 2011 surveillance data, with infections heavily concentrated in urban centres (Ministry of Health, 2011a); estimated HIV prevalence among IDUs in the capital city of Hanoi was 21%, down from 24% in 2009 (Ministry of Health, 2011a). Historically, opiate use in Vietnam was associated with opium smoking. However, heroin began to dominate

local drug markets in the late 1990s (Nguyen & Scannapieco, 2008), with a sharp increase in the use of injection as a method of self-administered drug use (Nguyen & Scannapieco, 2008) and this fuelled the rapid spread of HIV infection.

Data on heroin users in Vietnam come from independent researchers as well as government surveillance studies. Independent research has shown generally high rates of injection risk, including syringe sharing, ranging from 13.3% among out of treatment male IDUs in rural Bach Ninh province (Quan et al., 2009) to nearly 20% among sexually active male IDUs in the same area (Schumacher et al., 2009). One study, conducted among HIV-positive individuals in 20 provinces, reported that 18.9% of male HIV+ IDUs had borrowed used syringes, and 16.4% had lent used syringes in the past month (Thanh et al., 2009). In addition, the practice of sharing drug solutions, via interpersonal use of shared drug and injection paraphernalia (e.g. cookers, syringes, etc.), has been shown to contribute to transmission risk (Clatts et al., 1999). Both drug and syringe sharing is particularly high among IDUs in rural Vietnam (Bergstrom et al., 2008; Quan et al., 2009), and these practices have been associated with HIV infection (Go et al., 2011). National surveillance data shows syringe and needle sharing in the past month ranging from 3.3% to 30.2%, with rates in Hanoi of 12.0% (Ministry of Health, 2011b).

At least two, non-exclusive factors may account for this geographic variation in the prevalence of HIV among local injector groups: first, the structure of local heroin injection groups may contribute to increased transmission risk (Costenbader, Astone, & Latkin, 2006; Latkin, Kuramoto, Davey-Rothwell, & Tobin, 2010). For example, if the structure of local drug and syringe sharing groups are relatively fluid and open, this increases the overall probability that a heroin user will encounter an infected injection partner. Second, there may be as yet unrecognized variation in the practices and techniques employed in preparing and distributing shared drug solutions within local drug sharing groups (Clatts, Le, Goldsamt, & Yi, 2007), and these underlying differences may also contribute to differential transmission risk and thus account for geographic differences in HIV prevalence (Clatts et al., 1999; Vaswani & Desai, 2004). Understanding this social and behavioural variation can enhance our understanding of the spread of HIV within injector networks and to the general population.

High rates of sexual risk have been found in IDU populations worldwide, including the United States (Kral et al., 2001), the country of Georgia (Chikovani, Bozicevic, Goguadze, Rukhadze, & Gotsadze, 2011) and in Tanzania (Williams et al., 2007). These studies show that IDUs are sexually active, and that their HIV risk is related to both injection and sexual practices. High rates of sexual risk are also found among IDUs in Vietnam, and these behaviours have the potential to transmit HIV to non-injecting populations. Between half and two-thirds of IDUs report having recent sexual intercourse (Hammett et al., 2007), and rates of condom use are low (Hammett, Van, Kling, Binh, & Oanh, 2010). Rates of sexually transmitted infections among IDUs are as high as 30% in cross-sectional studies (Go et al., 2006). Among women, having an IDU sex partner strongly predicts HIV seropositivity among persons tested at VCT centres throughout Vietnam (Hong et al., 2011). Sex with female sex workers is reported frequently in male IDU populations (Go et al., 2011). In border provinces of Vietnam, sex with female sex workers and casual sex partners was

found to increase the likelihood of HIV infection 3.4 times compared with IDUs who did not have non-regular sex partners (Tuan et al., 2007). In Hanoi, one study found that 14% of female sex partners of male IDUs were HIV-positive, and that rates of condom use were only 27% in these couples (Hammett et al., 2010).

Despite the importance of high-risk heroin injection practices in the rapidly growing HIV epidemic in Vietnam, there is surprisingly limited information about either the specific practices and techniques that are used to prepare and share drugs or about the structure and social character of the injection groups in which these practices and techniques occur. Moreover, although there is increasing recognition that IDUs are sexually active, and thus have great potential to serve as a bridge population in spreading HIV, there is also limited information on the specific sexual risk practices in which heroin users participate. In an effort to begin to address these gaps in information, the objective of this article is to describe injection and sexual risk practices from a large sample of young, heroin injectors in Hanoi, Vietnam.

Methods

A venue-based cross-sectional study was designed to detail drug use and sexual risk practices among young heroin users in Hanoi, Vietnam. A detailed description of the sampling and recruitment has been described elsewhere (Clatts et al., 2007). Briefly, between January and July of 2005, an out-of-treatment sample of male and female heroin users between the ages of 16 and 29 was recruited in public venues, including parks, tea stalls and other areas in which drug users were known to congregate, for participation in a street-based, cross-sectional interview. Eligibility for participation in the study was restricted to those who self-reported having inhaled (smoked, snorted, etc.) or injected heroin within 30 days prior to the interview, and interviewers approached all persons in the venue who appeared to be in the target age range for a preliminary screening interview. Eligible participants were then invited to participate in the cross-sectional interview, and 90% of those screened did so. Interview domains included demographic characteristics; lifetime exposure and current use of alcohol, tobacco and a wide range of illegal drugs; onset of drug initiation; mode of administration at first use; current patterns of heroin use; onset of sexual activity; current sexual practices; concurrency of drug and sexual risk; exposure to HIV/STD education and testing services; exposure to drug treatment; and knowledge of behavioral risks factors associated with HIV transmission.

Subjects were paid the equivalent of US\$5 in local Vietnamese currency in compensation for their time. All study procedures and instruments were reviewed and approved by Institutional Review boards in both the United States and Vietnam.

Specific variables were aggregated to describe unsafe injection and sexual practices. Unsafe injection practices included sharing syringes, frontloading or backloading to or from a used syringe or sharing a cooker to prepare and divide drug solutions in the past 30 days. Any participant who engaged in one or more of these practices was considered to have engaged in unsafe injection. Unsafe sexual practices included not using condoms the last time the participant had intercourse (vaginal or anal) and engaging in sex work in the past 30 days.

Descriptive statistics were used to illustrate demographics, drug and sexual risk practices among study participants. Comparisons of injectors and non-injectors, as well as between injectors who did and did not report unsafe injection practices, were made using chi-square analyses and independent samples *t*-tests. An unadjusted logistic regression was used to look at unsafe sexual practices as a possible predictor of unsafe injection and along with an adjusted logistic regression model that controlled for demographics and drug risk practices. All analyses were conducted using SPSS (Armonk, NY) software.

Results

Demographics

A total of 1270 participants were recruited in this study. Of them, 862 (67.9%) had injected heroin in the past 30 days, and the findings presented in this article are based on data collected from these current injectors. Most (92.8%) were male, and participants had a mean age of 23.8 (range 16–29, SD 2.9) years. Most (93.2%) were unmarried at the time of the interview. Participants had completed an average of 9.2 years of school (range 0–14, SD 2.9; equivalent to 10.2 years in the UK); 4.8% reported that they were still in school. Most were living in a stable residence (64.2% in their family's home), However, 18.9% reported living in a hotel or temporary short-term room, and 9.2% reported living on the street or in some other public venue; 77.1% were born in Hanoi, and most of those born elsewhere had moved to Hanoi as adults. Detailed demographic data are listed in Table 1.

Heroin injection and other drug use

As an artifact of study eligibility, all participants reported current heroin injection (defined as at least one episode of heroin injection within the past 30 days). Mean age of first heroin use was 18.5 years, with a range of 11–27 (SD 3.1) years. At first use, most (93.0%) employed smoking as a means of self-administering heroin. The most commonly cited reasons for first trying heroin included “encouragement from friends” (79.1%) and “curiosity” (53.3%). Among participants whose initial use involved some form of inhalation (i.e. non-injection), but who subsequently had employed injection, 23.2% reported having injected within one year of the time that they had first been exposed to heroin. Participants reported a mean age of 20.9 years for their first injection (range 11–29 years, SD 3.1).

Most participants reported that either heroin (82.0%) or opium (13.9%) was the first drug they ever used “to get high”. However, participants reported using a wide range of other drugs in their lifetime. Apart from heroin, the most commonly used illicit drugs were opium (43.3%), followed by marijuana (35.0%), amphetamine/methamphetamine (34.6%) and valium (33.6%). More than three quarters (82.0%) had used heroin every day in the 30 days prior to the interview, and only 7.4% had used heroin on fewer than half the days. These data are listed in Table 2.

Current injection practices

The reported prevalence of syringe sharing in the past 30 days was low, with only 4.9% of participants indicating that they had injected at least once with a syringe that had previously been used by someone else, and 6.7% giving a used syringe to someone else. Other forms of

drug sharing were also relatively rare, with only 5.1% reporting that they had frontloaded to/from a used syringe and 0.7% reporting that they had backloaded to/from a used syringe. Only 2.9% reported sharing a cooker or similar type of vessel often used to prepare and divide shared heroin solutions (Clatts et al., 1999). When these methods are aggregated, a total of 12.9% of participants engaged in some form of potentially unsafe means of drug sharing within the past 30 days.

Participants reported much higher rates of “safe” drug division. For example, 32.8% reported dividing drugs while the drugs were dry, and 68.1% reported frontloading to a sterile syringe and 4.8% backloading to/from a sterile syringe. Overall, 85.5% of current injectors reported at least one safe method of drug division. Among injectors who reported at least one type of unsafe drug division in the past 30 days, 68.5% also reported at least one type of safe drug division during this period, a fact that highlights the situational nature of injection decision-making among many young heroin injectors in this sample (Clatts, Le, Goldsamt, & Colon-Lopez, 2010, 2011).

Among those who shared syringes, 64.4% reported sharing with more than one other person. About one-third of participants (36.8%) reported that they typically inject alone. However, 41.7% reported typically injecting with different people at different times (open injection groups) rather than consistently with the same group of injectors. These data are listed in Table 3.

Current sex practices

All participants reported high rates of sexual activity, high rates of age discordance with some types of sex partners and generally low rates of condom use. Sex work was widely reported among female participants, although less frequently among male participants. For clarity, we present sexual data from male and female participants separately.

Males—Among male heroin injectors in our study, 90.1% had ever had vaginal sex and 36.7% reported having vaginal sex in the past month. Reported rates of anal sex were low, with only 2.0% indicating that they had ever had receptive anal sex and 5.1% indicating that they had ever had insertive anal sex. Age discordance with vaginal sex partners was low; 65.8% of the most recent partners were within two years of the participant’s age; only 34.2% of these partners were more than two years older or younger than the participant. Reported condom use was low, with only 41.3% reporting that they used condoms the last time they had vaginal sex.

Among male heroin injectors, 6.7% reported having ever exchanged sex for money or other material gains. In addition, 75.5% of those who had ever exchanged sex ($n = 37$) had done so within the past month, averaging 9.1 exchanges (SD 10.5), with 6.3 different partners (SD 8.8). Age discordance with sex work clients was high, with 73.1% of clients being three or more years older than the participant. Rates of condom use during sex work were low, with condom use reported at 14.3% of the most recent receptive anal sex events and 36.4% of the most recent insertive anal sex events. These data are listed in Table 4.

Females—All (100%) female participants reported having had vaginal sex in their lifetime (80.6% within the past month) and 9.7% had ever had anal sex (50.0% in the past month). Rates of age discordance were high among female participants, with 63.3% reporting that their most recent vaginal sex partner was more than two years older than they were and 83.3% reporting this for their last anal sex partner. Reported condom use was low, with only 48.4% reporting that they used condoms the last time they had vaginal sex and 16.7% reporting condom use the last time they had anal sex.

Reported rates of sex work were also high, with 50.0% of female participants reporting having ever exchanged sex for money or other material gains. In addition, 87.1% of these participants ($n = 27$) engaged in sex work within the past month, averaging 31.2 exchanges (SD 22.1), with 25.9 different partners (SD 21.9). Age discordance was high with sex work partners, with 79.0% of these partners being three or more years older than the participant. Rates of condom use for female heroin injectors during sex work vary, from 25.0% for anal sex to 81.8% of female participants engaging in vaginal sex. These data are listed in Table 4.

Overlap of injection and sexual risk

Comparisons were made to determine the overlap of injection and sexual risks.

Participants who reported at least one type of unsafe injection during the past 30 days, compared to those who did not report this risk, were more likely to also report engaging in at least one sexual risk practice during this time (69.4% vs. 55.3%, $\chi^2 = 7.86$, $p = 0.005$). Similarly, those who engaged in at least one type of unsafe sex in the past 30 days were more likely to also engage in unsafe injection during this time than those who did not engage in unsafe sex (15.7% vs. 9.2%, $\chi^2 = 7.86$, $p = 0.005$). Adjusted logistic regressions did not reveal any significant predictors of either unsafe injection or lack of condom use among heroin injectors (data not shown). Both adjusted and unadjusted logistic regressions show that lack of condom use is associated with twice the odds of unsafe injection among heroin injectors (OR = 1.8, 95% CI = 1.5–2.3, $p = 0.005$). Results from these comparisons are listed in Table 5.

Discussion

This study collected data on the overlap of injection and sexual risk practices among urban heroin users in Hanoi, Vietnam. There are several limitations associated with this study, the most prominent of which is that the data were collected in 2005. Since these data were collected, Vietnam has made substantial progress in recognizing and intervening on the HIV/AIDS epidemic, and data show that HIV prevalence rates among IDUs began to decline in the year this study was conducted (Ministry of Health, 2011a). Perhaps, the most prominent policy change was the 2006 Law on HIV Prevention and Control, which stipulated a shift towards harm reduction in the government's approach towards drug use (Nguyen et al., 2010). This was followed by the adoption of Methadone maintenance therapy in compulsory drug detoxification and detention centres (known as O6 centres) in 2008 (Nguyen, Nguyen, Pham, Vu, & Mulvey, 2012).

However, there continues to be great geographic variability, with higher prevalence seen in urban centres, and IDUs in Hanoi continue to be at high risk for acquiring and transmitting HIV infection due to substantial background prevalence rates. Prior research on sexual behaviours among Vietnamese IDUs has focused on different regions (Go et al., 2011) or on the female sex partners of male IDUs (Hammett et al., 2010). The data presented in this paper, which focus on the injection and sexual risks of IDUs in Hanoi, therefore continue to be relevant and fill a needed gap in the literature on the overlap of injection and sexual risk practices of IDUs in Hanoi.

Because results come from a street-based sample collected in a single city, Hanoi, they may not be generalisable to IDUs in other venues or in other cities in Vietnam, in Asia or elsewhere. Although the sample size of the overall study is large, data on less frequent behaviours (e.g. specific sexual practices associated with male sex work or among subgroups of heroin users) are based on relatively small numbers of participants and should therefore be interpreted with caution. In addition, data were collected via self-report, and thus may be subject to social desirability bias.

Nonetheless, this study has several unique features. Highly specific data on both injection and sexual practices were gathered from a large urban sample of out-of-treatment and relatively young heroin users, almost all of whom were sexually active, and many of whom engaged in sex work. The findings presented in this study suggest that drug use practices among injectors in Hanoi evidence a great deal of variability and are likely subject to situational and economic influences with important public health implications. In addition, the data show that heroin users, including injectors, are sexually active, frequently engaging in sexual behaviours that place them and others at risk for HIV and other sexually transmitted infections. Most importantly, substantial overlap is seen in injection and sexual risk practices among participants in this study. Future studies will be needed to elucidate these factors and develop interventions that target the real-world experiences of Vietnamese IDUs in various settings.

Although reported rates of unsafe injection were relatively low in this study, they are in line with reports from other researchers (Quan et al., 2009; Schumacher et al., 2009; Thanh et al., 2009) and from national surveillance data (Ministry of Health, 2011b), all of which report rates of syringe sharing below 20% in the past month (although reported rates are higher in several regions other than Hanoi in national data). Of particular interest in our data is that most heroin injectors in the sample reported multiple methods of drug division, including both safer and more risky methods, and that more than 40% report injecting with multiple other injectors in open injection groups. Although our cross-sectional data do not support situational analyses of injection events, it is plausible that situational factors, such as police presence, injection group composition and geographic location, impacted the selection of methods used for drug division. Economic factors play a role in drug acquisition and division, as injectors often need to pool their money to obtain heroin. Because police can, and occasionally do, detain suspected injectors without directly observing illegal behaviours, injectors had a strong incentive to inject rapidly and dispose of any drug-related paraphernalia as soon as possible. Each of these factors likely increases the sharing of drugs, syringes and cookers, thus leading to increased HIV transmission risk.

Our data on condom use among male IDUs (43.1% at last sexual event) is consistent with national data from the integrated HIV/STI Biological and Behavioural Surveillance (Ministry of Health, 2011b), which shows that 51.9% of male IDUs reported condom use at last sexual intercourse. While national data do not reveal geographic differences, it is notable that there is substantial room for improvement in condom use among IDUs.

Our study recruited a higher percentage of female heroin injectors (7.2%) than seen in similar studies (Go et al., 2013) and fully half of our female participants were sex workers. This likely reflects the presence of sex work in the same public venues in which heroin is acquired and used, as it is in these venues where most of our participants were recruited. Economic factors leading to sex work increase HIV risk, as well as the risk for acquisition and transmission of other STIs, and our data clearly illustrate this risk through high rates of current sexual activity and low rates of condom use among both sex work clients and elective sexual partners. Notably, sexual partnering patterns with both elective sex partners and sex work clients showed a high degree of sex with age-discordant partners, which has been shown to be associated higher rates of STIs and greater willingness to engage in sexually risky behaviours (Morrison-Breedy, Xia, & Passmore, 2013).

While our data clearly highlight the overlap of injection and sexual risk among young heroin users in Hanoi, much work remains to be done to understand the implications of these findings for prevention of HIV and other risks. Future studies assessing the environmental and social factors that influence risk practices, as well as the overlap of elective and commercial sex in heroin injector communities, can aid in the development of risk reduction strategies. Assessment of STIs other than HIV is also necessary in light of the high rates of sexual risk seen in this population. This future work is necessary to limit the spread of HIV and other STIs in both high-risk and general populations in Vietnam.

Acknowledgments

Declaration of interest

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Table 1**Demographics.**

Age (years)	<i>n</i>	
Mean	862	23.8
Range		16–29
Gender	<i>n</i>	%
Male	800	92.8%
Female	62	7.2%
Relationship status	<i>n</i>	%
Single, no domestic partner	690	80.0%
Single, domestic partner	78	9.0%
Married	59	6.8%
Separated/divorced	35	4.1%
Highest grade completed		
Mean		9.2
Range		0–14
	<i>n</i>	%
Currently in school	41	4.8%
Where living	<i>n</i>	%
Family's home	553	64.2%
Friend's home	36	4.2%
Hotel/shelter/short-term room	163	18.9%
Own home	9	1.0%
School dorm	1	0.1%
Street/bus station/public venue	80	9.2%
Other	19	2.2%
Where born	<i>n</i>	%
Hanoi	665	77.1%
Elsewhere	197	22.9%

Numbers may not add up due to missing data; percentages have been adjusted to exclude missing data.

Table 2**Heroin and other drug use and injection.**

First heroin use – age	<i>n</i>	
Mean	862	18.5
Range		11–27
First heroin use – mode of administration	<i>n</i>	%
Smoked	802	93.0%
Sniffed	3	0.3%
Injection	57	6.6%
First use – reason for using	<i>n</i>	%
Curiosity	459	53.3%
Wanted to get high	142	16.5%
Friends encouraged me	681	79.1%
Sex partner encouraged me	20	2.3%
Drug dealer encouraged me	22	2.6%
Other	127	14.8%
Time between initiation (smoking) and first injection	<i>n</i>	%
One month or less	29	3.6%
One month to one year	157	19.6%
More than one year	616	76.8%
First heroin injection – age	<i>n</i>	
Mean	856	20.9
Range		11–29
First drug ever used to get high	<i>n</i>	%
Marijuana	16	1.9%
MDMA (Ecstasy)	4	0.5%
Amphetamine/methamphetamine	7	0.8%
Cocaine	2	0.2%
Morphine (Dolargan)	4	0.5%
Valium (Seduxen)	2	0.2%
Opium	120	13.9%
Heroin	707	82.0%
Ever used...	<i>n</i>	%
Tobacco	857	99.4%
Alcohol	765	88.7%
Marijuana	302	35.0%
MDMA (Ecstasy)	168	18.6%
Amphetamine/methamphetamine	298	34.6%
Cocaine	32	3.7%
Morphine (Dolargan)	106	12.3%
Valium (Seduxen)	290	33.6%
Opium	373	43.3%

Ketamine	16	1.9%
Ever injected ... (among those who ever used ...)	<i>n</i> (never used)	% (of ever used)
Amphetamine/methamphetamine	45 (298)	15.1%
Cocaine	4 (32)	12.5%
Morphine (Dolargan)	2 (106)	1.9%
Valium (Seduxen)	2 (290)	0.7%
Opium	92 (373)	24.7%
Ketamine	3 (16)	18.8%
Frequency of heroin use		
Daily	707	82.0%
Fewer than half the days	64	7.4%
Used more than once on last day used	718	83.3%

Numbers may not add up due to missing data; percentages have been adjusted to exclude missing data.

Table 3

Current injection practices (past 30 days).

	<i>n</i>	%
Injected heroin	862	67.9%
Used syringe after someone else	42	4.9%
Gave used syringe to someone else	58	6.7%
Methods of drug division		
Frontloaded to/from used syringe	44	5.1%
Backloaded to/from used syringe	6	0.7%
Mixed in cooker, everyone drew	25	2.9%
Any syringe sharing/unsafe drug division	111	12.9%
Frontloaded to/from sterile syringe	587	68.1%
Backloaded to/from sterile syringe	41	4.8%
Divided dry, each person prepared own	283	32.8%
Any safe drug division	737	85.5%
Shared syringe with more than one other person (injectors who shared only, <i>n</i> = 76)	49	64.4%
Injection groups		
Usually inject alone	317	36.8%
Usually inject with different people (not same group)	359	41.7%
Usually inject with the same group	185	21.5%

Numbers may not add up due to missing data; percentages have been adjusted to exclude missing data.

Table 4

Current sexual practices among current heroin injectors.

	Males		Females	
	<i>n</i>	%	<i>n</i>	%
Vaginal sex				
Ever	720	90.1%	62	100%
Within the past month (among ever)	264	36.7%	50	80.6%
Within the past year (among ever)	528	73.3%	58	93.5%
Receptive anal sex				
Ever	13	2.0%	6	9.7%
Within the past month (among ever)	6	46.2%	3	50.0%
Within the past year (among ever)	10	76.9%	5	83.3%
Insertive anal sex				
Ever	39	5.1%	Na	Na
Within the past month	16	41.0%	Na	Na
Within the past year	26	66.7%	Na	Na
Last vaginal sex – age concordance				
Partner was more than three years younger	161	23.9%	1	1.7%
Partner was 1–2 years younger	253	37.6%	3	5.0%
Partner was same age	133	19.8%	6	10.0%
Partner was 1–2 years older	57	8.5%	12	20.0%
Partner was more than three years older	69	10.3%	38	63.3%
Last receptive anal sex – age concordance				
Partner was more than three years younger	1	8.3%	0	0.0%
Partner was 1–2 years younger	0	0.0%	0	0.0%
Partner was same age	2	16.7%	0	0.0%
Partner was 1–2 years older	0	0.0%	1	16.7%
Partner was more than three years older	9	75.0%	5	83.3%
Last insertive anal sex – age concordance				
Partner was more than three years younger	4	12.5%	Na	Na
Partner was 1–2 years younger	7	21.9%	Na	Na
Partner was same age	4	12.5%	Na	Na
Partner was 1–2 years older	3	9.4%	Na	Na
Partner was more than three years older	14	43.8%	Na	Na
Condom use (among those who ever engaged in each specific practice)				
Last vaginal sex	297	41.3%	30	48.4%
Last receptive anal sex	2	16.3%	1	16.7%
Last insertive anal sex	18	46.2%	Na	Na
Last vaginal sex work – client	Na	Na	18	81.8%
Last receptive anal sex work – client	1	14.3%	1	25.0%
Last insertive anal sex work – subject	4	36.4%	Na	Na
Exchanged sex for money				

	Males		Females	
	<i>n</i>	%	<i>n</i>	%
Ever	49	6.7%	31	50.0%
Last month	37	75.5%	27	87.1%
Sex work last month				
Mean number of times (range)	9.1 (1–50)		31.2 (1–99)	
Mean number of partners (range)	6.3 (1–40)		25.9 (1–60)	

Numbers may not add up due to missing data; percentages have been adjusted to exclude missing data.

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Table 5

Overlap of injection and sexual risk (past 30 days).

	<i>n</i>	%	χ^2	<i>p</i> Value
	Unsafe injection			
Any unsafe sex (<i>n</i> = 492)	77	15.7%	7.86	0.005
No unsafe sex (<i>n</i> = 370)	34	9.2%		
	Unsafe sex			
Any unsafe injection (<i>n</i> = 111)	77	69.4%	7.86	0.005
No unsafe injection (<i>n</i> = 751)	415	55.3%		