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CONTENTS

GUIDELINES FOR AUTHORS

Complex recent Poly-drug use patterns and some correlates among Vietnamese injecting drug users: A preliminary epidemiological trajectory

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Abstract

Poly-drug use associates with a range of acute and chronic health problems, but the understanding of their association with risk behaviors in low- and middle-income countries remains limited. The objective of this study was to understand the prevalence of different poly-drug clusters among a cross-sectional sample of 509 people who inject drugs (PWIDs) in Hanoi, Vietnam, and their sociodemographic and behavioral correlates, utilizing latent class analysis (LCA). LCA identified three distinct substance use classes including (1) low opioids and alcohol use, (2) moderate use of opioids, alcohol, and tobacco, and (3) high and poly use of substances. High levels of substance use were strongly associated with being male, older than 35, unemployed, not living with Hepatitis C individuals, no history of being arrested, and currently not involved in methadone treatment. Individuals in the high and poly-drug use group were also more likely to be involved in unsafe sex and injection behaviors, which are significantly delayed for low and moderate drug users. These findings illustrate the pronounced prevalence of poly-substance use among PWIDs in Vietnam and demonstrate the need for the better epidemiological understanding of the complexity of substance use patterns among high-risk populations.

1. Introduction

Injection drug behaviors have been recognized as one of the key drivers of HIV transmission since the beginning of the epidemic. In 2010, there were an estimated 15.9 million people who injected drugs (PWIDs) globally, with one in five estimated to be HIV-positive [1]. The majority of whom reside in South and East Asia [2, 3]. Poly-drug use means the simultaneous use of more than one drug and it has been shown to be elevated among PWIDs [1, 4], with the use of alcohol and cigarettes starting relatively early then progressing to other stimulants [5]. A large-scale survey conducted on 76,541 adults in 22 European countries showed that approximately 30% of 15-16-year-old students consumed two or more substances in the past month prior to the survey with the prevalence ranging from 22.5% to 40% of poly-drug users [6]. In Vietnam, approximately a quarter of those who inject heroin also reported using methamphetamine, and methamphetamine use have been associated with non-access to methadone treatment [7]. The percentage of concurrent drug use among methadone patients fluctuated from 11% to 14%. Although these findings demonstrate the growing prevalence of poly-drug use within Vietnam and internationally, characterization of poly-drug clusters among PWIDs remains limited [1].

Among PWIDs, poly-drug use has been shown to be associated with HIV transmission behaviors like unprotected sex and reduced medication adherence and treatment outcomes [6, 8]. Compared to single-drug users, poly-drug

users have also been found to have (1) higher acute health problems and drug-induced deaths due to interactions between different drugs consumed close together in time which can lead to increased toxicity and the co-use of several substances can also increase the risk of negative outcomes, such as accidents or injuries, and (2) chronic risks and problems were shown in longitudinal cohort studies that follow drug users in Europe (e.g. opioid or cocaine users, or injectors) over long periods of time show a very high mortality rate as compared to the general population, due to causes of overdoses, diseases, and violence [8]. More importantly, poly-drug use has been contributed substantially to a higher risk of HIV infection, including increased risk behavior in injecting drug use and unprotected sex with around 17.8% of PWIDs globally living with HIV [1, 9-12].

While studies conducted among the most-at-risk groups document drug use and other risk behaviors, little is known about the specific relationship between different patterns of poly-drug use and HIV transmission risk [5, 13-15]. Concomitantly, past analyses have focused primarily on the use of individual drugs without accounting for drug type or age of onset of drug use among the underserved populations [16]. The objective of this paper, therefore, is to describe the trajectory of drug use for a wide range of substances and to determine the socio-demographic and behavioral correlates of different poly-drug clusters among PWIDs in an urban setting, utilizing latent class analysis (LCA) [17].

2. Methods

People were eligible to participate if they (i) were at least 18 years old, (ii) have ever injected drugs at least once in a lifetime, (iii) agreed to participate in a voluntary HCV screening program at Hanoi Medical University (HMU), and (iv) received counseling and support from Vietnam Network of People Who Inject Drugs (VNPUD) members and were referred to the Sexual Health Promotion Clinic (SHP) at HMU from VNPUD.

Sample Size

The parent study was designed to evaluate HCV prevalence and sexual health risk among PWIDs who came to the HCV consultation in 2016. Therefore, the original sample size was calculated by estimating a proportion with a specified precision of patients infected with HCV among PWIDs who were given HCV treatment from 2005-2007 in Thai Nguyen province, Vietnam (p=0.89) [18]. A total of 509 PWIDs were recruited. In this paper, we use second data analysis to describe the pattern of poly-substance use in terms of trajectories and initiation and determine factors associated with poly-drug use as well.

Sampling

Participants were recruited as part of a cross-sectional, community-based study conducted between February 2016 and April 2017 in Hanoi, Vietnam. Study participants were recruited through five community-based organizations including Cat Trang, Gach Dau Dong, Ve Nha, Binh Minh, and Noi Binh Yen that accessed them at hotspots of 11 districts, provided them with counseling and referred them to the Sexual Health Promotion Clinic (SHP) at HMU, where they completed a series of self-report measures.

Variables

The survey contents included 6 general domains: (1) demographic characteristics; (2) accessibility to healthcare services; (3) substance use; (4) risk behaviors; (5) knowledge about HCV, and (6) testing result information.

• *Demographics*

We assessed participants' age, gender, marital status, educational attainment, place of living (urban, sub-urban), current living arrangement (with family, others), and whether they lived with HCV patients, previously been arrested, or were currently receiving methadone treatment.

• *Substance use*

To assess risky substance use within the last three months, we administered a modified version of the World Health Organization (WHO) Alcohol, Smoking and Substance Involvement

Screening Test (ASSIST) [19]. The scale included nine types of drugs, including alcohol, tobacco, cannabis, cocaine, methamphetamine, drugs or inhaled vaporized form, sedatives/hypnotics, and hallucinogenic drugs. Responses are on a 5-point Likert scale ranging from no (0) to daily (6). Answers were dichotomized into either 0 (no use) or 1 (1-2 times, monthly, weekly, and daily). A composite score was computed by summing nine dichotomized responses. In addition to these questions, the modified questionnaire assessed age of first use and route of administration.

• *Risk behaviors*

We assessed the frequency of 15 risk behaviors in the previous six months using a locally developed questionnaire. Examples of which include sharing or reusing dirty needles. Items were assessed on a four-point Likert scale: never, 1-2 times, monthly, weekly, and almost every day. Each item was dichotomized into "0" (never) or "1" (1-2 times, monthly, weekly, and almost every day).

Data Analysis

We used latent class analysis (LCA) to identify clusters of individuals reporting similar patterns of current drug use. LCA is a statistical technique that identifies clusters, or latent classes, by assuming conditional independence between variables (e.g. the 9 dichotomous drug items) given the latent class membership. That is, the latent classes represent the optimal grouping of the data to explain the co-variances observed between the variables. The parameters of the LCA model included: (1) the probability (for dichotomous) or mean (for continuous and count) of each variable within each latent class, and (2) the overall proportion of the population in each of the latent classes. The probability that a certain individual belongs to a certain latent class can be computed using Bayes' Rules [17] and the estimated parameters from the model. An individual's predicted membership is determined by finding the highest class membership probability out of all of the latent classes. This technique has been previously used to identify poly-drug patterns among a range of clinical and community samples [9, 10, 20].

In this study, three different LCA models were fitted using maximum likelihood in Mplus, version 6.11 [21] where the dichotomous variables were modeled with a binomial logit link and the count variable was modeled with a log Poisson link. Models were fitted sequentially, in order to increase class numbers. As models were non-nested, Bayesian Information Criterion (BIC), Lo-Mendell-Rubin-Likelihood ratio test (LMR-LRT), and entropy were used to select the best fitting model. We sought to minimize BIC and LMR-LRT while maximizing entropy [22]. T-test, Fisher's exact, and Chi-square analyses were subsequently used to test for demographic and behavioral differences between the three classes; alpha was set to the p=0.05 level.

Ethical Considerations:

The research was reviewed and approved by the Institutional Review Board at Hanoi Medical University (193/HĐĐ-ĐHYHN). All participants provided written consent.

3. Results

General characteristics of participants

Of the study sample (n=509), the average age was 38.5 (SD=7.2) and 78.4% were males. More than 81% of participants were living in urban districts, 50.9% were married, and 51% had at least a high school education. Most lived with their parents, spouse, and children (82%). The majority were employed at least on a part-time basis (82.7%). Additionally, infection rates were 61.7% and 51.1% for HCV and HIV, respectively, and 26.3% of the sample were not infected with either. Among those infected with HCV, 22.6% were HCV mono-infected and 39.1% were HCV/HIV co-infected.

Poly-drug use patterns based on the LCA model

Independent analyses by three analysts on the research team suggested that the 3-class model is the best-fitting model based on BIC, LMR-LRT (<0.001), and entropy (.848) [22]. The classes are listed below and have been named according to the prevalence of the nine individual drugs, the total drug count, and

the clinical implications of the subgroups for substance use and poly-drug use based on the gateway drug hypothesis.

Class 1 (*Low*): This class consisted of individuals who reported low use of opioids and alcohol with mean consumption of 0.61 drugs, consisting primarily of alcohol use (32.5%). An estimated 13% of the sample belonged to this class.

Class 2 (*Moderate*): This class was characterized by moderate use of opioids, alcohol, and tobacco with mean use of 2.63 drugs. Probabilities of alcohol and tobacco use reached 69% and 95%, respectively. An estimated 77% of the sample belonged to this class.

Class 3 (*High*): These individuals reported high, often poly-substance use with mean use of 4.75 drugs, with higher than average use of alcohol (79%), tobacco (87%), cannabis (54%), methamphetamine (84%) and illicit opioids (73%). The estimated prevalence of this class was 9.2%.

In general, participants reported an average use of 2.58 drugs, 90% self-reported tobacco, 76% used alcohol, 67% and 62% in turn reported inhaled vaporized forms and illicit opioids, and 52% reported methamphetamine in the last 90 days.

Overall, among surveyed participants, the use of alcohol and tobacco started relatively earlier and preceded the use of other stimulants. The *High* class tend to use alcohol and tobacco earlier (before 17 years of age) than the other two groups, but had the oldest age of first cannabis use (mean=28.2). While the *Low* class represented those who began using substances other than illicit drugs at younger age, the *Moderate* one was representative of participants who started using substances in the later period of their life (mean aged ≥30).

Association of demographic characteristics with the three latent drug use classes

Demographic factors associated with the three classes are presented in Table 2. Male PWIDs dominated the *Moderate* class with 83%, followed by the *High* and *Low* subgroups (71% and 58%, respectively). This gender difference across the three groups was statistically significant. Differences are also seen in age distribution. Specifically, the majority of participants who were aged 35 and older tended to belong to the *Moderate* class (72%) (p=0.006). More than 85% *Moderate* users lived with their family, which was more frequent than those in the *Low* and *High* (68.2% and 73.1%, p<0.01). Concomitantly, up to 32% of the *Low* class lived with someone with HCV, while only approximately 10% of those classified in the *Moderate* and *High* classes had similar living arrangements. The percentage of individuals in the *Low* class (35%) who were employed was notably higher than those in the *Moderate* (14%) and *High* (21%) classes. Average monthly income in this sample was 4.7 million Vietnam Dong (approximately $204).

Rates of incarceration and participation in MMT treatment also differed significantly among the three groups. Compared to the *High* (56%) and *Low* (38%) groups, individuals in the *Moderate* class (66.8%). Up to 23% of the moderate class participated in MMT treatment was the moderate class, while less than 7% of the remaining two classes did (p<0.001).

High risks for HIV transmission in the last 6 months by the three latent drug use classes

Overall, the proportions of risk behavior involvement ranged from 2.95% (using dirty needles) to 54.42% (having sex without using condoms). Across all three classes, high and poly-substance use accounted for the highest percentages of risk behaviors in the last 6 months (Table 3), in which having sex without condom, having sex with PWIDs without condom use, and selling sex are the three highest risk behaviors. In general, risk behaviors among the low drug use were significantly lower than that of the moderate poly-substance use with the exception of behaviors like sharing drug paraphernalia, using dirty needles, and having sex with other PWIDs without condom use.

4. Discussion

Our study suggests that more than three-fourths of PWIDs in Vietnam can be classified as having moderate use of opioids, alcohol and tobacco. High and poly-substance use accounted for nearly 10% of those who used drugs. Cannabis, illicit drugs, and methamphetamine were the three most popular drugs

among PWIDs among this class. These findings corroborate those of previous studies. A study conducted among 521 people who inject heroin in Hanoi, Vietnam found that 8.4% reported polydrug use, in which nearly 60% reporting using alcohol; 96.5% injecting heroine; and 81.5%, using methamphetamine [1]. Another study in Kenya illustrates that recent poly-drug use was common with almost two-thirds using marijuana and 50.1% using tranquilizers in addition to heroin in the most recent month [3]. Interestingly, nearly 52% of PWIDs in our study used methamphetamine; the majority of whom (84.3%) were poly-substance users, while only 21.5% of those in the *Moderate* class reported using this drug. This prevalence is considerably higher than those in previous reports, which may suggest that use of methamphetamine may be particularly elevated among PWIDs with high poly-drug use [9]. This might be because PWIDs living in urban settings are more likely to use methamphetamine than those living in other areas because of its availability. As methamphetamine use is widely related to poly-drug use and other risk behaviors [1, 23], it is essential to pay more attention to PWIDs with poly-drug status , especially among those who report methamphetamine, cannabis and illicit drug use in urban settings of developing countries.

Factors associated with poly-substance use pattern in this study include gender, age group, living with HCV people, history of incarceration, and current participation in MMT treatment. More specifically, individuals with high poly-drug use are less likely to be engaged in MMT treatment than the two remaining groups. Because poly-drug use poses a challenge to MMT accessibility like a potential risk for strategies improving the likelihood of MMT and substance use treatment in the long run [7]. Similarly, findings from a Vietnamese study in 2018 found that people who inject heroin with high poly-drug use have 4.4 times higher odds of not taking part in MMT treatment than people who have the same socio-demographic characteristics and with heroin and methamphetamine use [1]. This suggests that accessibility to MMT treatment plays a pivotal role not only for the treatment of opiate dependence but also for reducing the risk of poly-drug use among PWIDs. It is interesting to note that up

to 30% females reported high and poly-substance use. African studies suggest that the HIV prevalence among women PWIDs may be 2-10 times higher than among men PWIDs [24, 25]. This highlights the importance of comprehensive prevention programs, including harm-reduction interventions, that is critical to prevent transmission of HIV among female PWIDs with high and poly-substance use.

When it comes to age groups, those aged 35 years and over tends to use high amounts of high and poly-substance use in this study which lead to higher risks for HIV infection. The finding is similar to ones illustrating that the HIV prevalence among male PWIDs is 3.5 times as high as that of men aged 15–49 years in the general population [3]. Concomitantly, the finding reveals that PWIDs after post-release period are more likely to use drug than others. A study conducted in 2009 showed that former inmates return to environments that strongly trigger relapse and place them at risk for overdose [26]. This effect may stem from their limited access to evidence-based substance abuse treatment during incarceration, after release, and while under community supervision [27-29]. This suggests the need to better identify drug problems among this population and provide them with the tools to combat drug-related issues post-release. In regard to living with HCV people, around 11% of PWIDs in this study with moderate and high levels of poly-substance use reported living with at least one people infected with HCV. This highlights the fact that PWIDs are at high risk of HCV infection. A recent systematic review identified 24 countries where HCV antibody prevalence in PWIDs ranged 40–60% (such as Australia, UK, Greece), 25 countries with a range of 60-80% (USA, Canada, Germany) and 12 (Mexico, Thailand, Russia, the Netherlands) where prevalence was 80% or higher [30]. Therefore, the World Health Organization identifies PWIDs as a key target group for HCV prevention and treatment [31].

The proportions of those at high risk for HIV transmission in this study ranged from 2.95% to 54.42%. Individuals who had high and poly-substance use tended to also report many other risk behaviors, particularly relating to unsafe sex and highrisk injection behav-

iors. The *Moderate* and *Low* groups share the same pattern. A study conducted by Tun et al. (2015) showed that overall, an estimated 67.3% of PWIDs engaged in at least one risk behavior related to injection drug use in a typical month, and 80% are estimated to have ever engaged in any of these practices in their lifetime [3]. Examples of such high-risk injection practices among PWIDs include receptive syringe sharing (47.4%), pre-filled needles and syringes (33.2%), front- or back-loading (46.3%), sharing preparation water (57.1%), sharing equipment (56.9%), and drawing drugs from a common container (37.9%). Receiving fewer prevention interventions and lack of the capacity to handle key populations at risk for HIV as most of the foreign aid and global attention has focused on the heterosexual transmission of HIV/AIDS [3]. In addition, this study design with convenient sampling is different from the previous studies, which used respondent-driven sampling. These results show an urgent need to strengthen current outreach efforts to increase personal awareness of risk and to improve harm reduction efforts to decrease sharing of injection equipment. Such efforts should be coupled with increased access to sterile injection equipment in urban settings.

These findings should be considered in light of study limitations. First, the cross-sectional nature of the design may preclude causality assessments. Second, the measures on substance use and sexual behavior measures were self-reported and thus may be subjected to social desirability and recall biases. Nonetheless, we employed peer interviewers who had extensive experience working with PWIDs and who had training in interview techniques, which may help reduce the level of bias. It is important to note that the unsafe sex and risk injection behaviors were collected in the last 6 months and participants who self-reported injected at least once in their lifetime were recruited. This may not fully reflect the injection situation and risk behaviors of participants. Last but not least, although the sampling strategies employed entailed an exhaustive effort to enumerate as many community-based sites as possible, the proportion of PWIDs with MMT treatment remains high and sample size was calculated based on the prevalence of HCV infection. We cannot ascertain that all relevant sites were included, limiting the generalizability of findings.

5. Conclusions

This study highlights the high proportion of PWIDs with moderate poly-substance use (mostly methamphetamine and illicit drugs) in Hanoi, Vietnam. The *High* class tend to use alcohol and tobacco earlier than the other two groups, but had the oldest age of first cannabis use. While the *Low* class was representative of those who began using substances other than illicit drugs at younger age, the *Moderate* one represented participants who started using substances in the later period of their life.

It identifies that poly-drug use is associated with being male, being above 35 years old, having reported unsafe sex and risk injection behaviors, history of reincarceration, and being on MMT treatment. Interventions should pay more attention to (1) PWIDs with poly-substance status, especially methamphetamine, cannabis and illicit drugs in urban settings; (2) organize health communication and education in prisons in order to increase safe injection practices among PWIDs; and (3) strengthen urgent need for current outreach efforts to increase personal awareness of risk and to decrease sharing of injection equipment.

Table 1. *Latent class analysis with total drug count – 3 cluster model*

Latent Class	Average Age of First Use	% used within 90 last days	Low Opioids and Alcohol Use	Age of First Use	Moderate use of Opioids, Alcohol, and Tobacco	Age of First Use	High and Poly Substance Use	Age of First Use
Alcohol	18.11±4.30[a]	75.68	32.5	17.80±3.28[a]	68.8	18.31±4.53[a]	79.2	16.91±3.08 [a]
Tobacco	17.14±4.51[b]	89.63	0.0	16.50±4.16[b]	95.0	17.36±4.57[b]	87.1	15.88±3.99[b]
Cannabis	26.56±8.52[c]	28.74	0.0	23.70±5.81[c]	3.2	26.56±8.21[c]	54.3	28.20±10.13[c]
Cocaine	29.44±8.82	18.75	0.0	25.33±4.04	0.8	30.38±9.46	0.0	---
Methamphetamine	30.67±8.79	51.89	0.0	23.58±6.31	21.5	31.68±8.31	84.3	29.46±10.05
Inhaled Vaporized Form	27.50±5.83	66.67	0.0	---	0.0	28.33±7.57	9.0	27.0±5.48
Sedatives/Hypnotics	29.37±8.09	14.51	0.0	25.06±5.50	4.9	30.01±8.46	14.4	28.96±6.71
Hallucinogenic Drugs	28.05±7.71	25.47	0.0	25.25±4.64	0.0	28.98±7.91	40.6	26.94±7.79
Illicit Opioids	22.98±6.43	62.28	36.1	24.06±7.16	65.0	22.98±6.30	72.9	21.52±6.21
Average Drug Use		2.58	0.61		2.63		4.75	
Proportion in Class		100	13.0%		76.8%		9.2%	
Average Current Age		38.54	36.48		39.18		36.44	
n		509	66		391		52	

a, b, c Statistical Pairwise Differences Between Tobacco, Alcohol, and Cannabis with a Tukey correction for multiple comparisons at the 5% alpha level
Bolded values indicate differences in average age of first use by class at the .05 alpha level

Table 2. *Demographic Characteristics by The 3 Drug Use Clusters*

	Total (N=509)	Low (n=66)	Moderate (n=391)	High (n=52)	
	n (%)	n (%)	n (%)	n (%)	p-value[a]
Gender					
Female	110 (21.61)	28 (42.42)	67 (17.14)	15 (28.85)	<0.001
Male	399 (78.39)	38 (57.58)	324 (82.86)	37 (71.15)	
Age Group					
≤35	163 (32.02)	30 (45.45)	111 (28.39)	22 (42.31)	0.006
>35	346 (67.98)	36 (54.55)	280 (71.61)	30 (57.69)	
Place of Living					
Urban	414 (81.34)	55 (83.33)	311 (79.54)	48 (92.31)	0.077
Sub-urban	95 (18.66)	11 (16.67)	80 (20.46)	4 (7.69)	
Living Arrangement					
Others	92 (18.07)	21 (31.82)	57 (14.58)	14 (26.92)	0.001
Family	417 (81.93)	45 (68.18)	334 (85.42)	38 (73.08)	
Living with HCV people					
Yes	68 (13.36)	21 (31.82)	41 (10.49)	6 (11.54)	<0.001
No	441 (86.64)	45 (68.18)	350 (89.51)	46 (88.46)	
Educational Status					
Secondary and Lower	248 (48.72)	26 (39.39)	196 (50.13)	26 (50.0)	0.360
High School	223 (43.81)	35 (53.03)	168 (42.97)	20 (38.46)	
Colleges, Universities	38 (7.47)	5 (7.58)	27 (6.90)	6 (11.54)	
Marital Status					
Single	144 (28.29)	18 (27.27)	109 (27.88)	17 (32.69)	0.738
Married	259 (50.88)	33 (50.0)	204 (52.17)	22 (42.31)	
Separated/Divorced	106 (20.83)	15 (22.73)	78 (19.95)	13 (25.0)	
Employment status					
Employed	88 (17.29)	23 (34.85)	54 (13.81)	11 (21.15)	<0.001
Unemployed	421 (82.71)	43 (65.15)	337 (86.19)	1 (78.85)	
Monthly income					
Mean ± SD (Million VND)	4.74±3.36	4.61±2.51	4.77±3.53	4.66±3.01	0.002
Ever Arrested					
Yes	315 (61.89)	25 (37.88)	261 (66.75)	29 (55.77)	<0.001
No	194 (38.11)	41 (62.12)	130 (33.25)	23 (44.23)	
Currently MMT treatment					
Yes	96 (18.86)	4 (6.06)	90 (23.02)	2 (3.85)	<0.001
No	413 (81.14)	62 (93.94)	301 (76.98)	50 (96.15)	

[a]: Statistical Chi-square and Fisher Exact differences by class.

Table 3. *High-Risk Behaviors Associated with HIV Transmission in the Past Six Months, by Drug Use Clusters*

	Total (N=509)	Low (n=66)	Moderate (n=391)	High (n=52)	
	n (%)	n (%)	n (%)	n (%)	p-value[a]
Shared Needles					
Yes	40 (7.86)	4 (6.06)	28 (7.16)	8 (15.38)	0.099
No	469 (92.14)	62 (93.94)	363 (92.84)	44 (84.62)	
Reused Needles Used					
Yes	30 (5.89)	3 (4.55)	20 (5.12)	7 (13.46)	0.049
No	479 (94.11)	63 (95.45)	371 (94.88)	45 (86.54)	
Shared Drug Preparation Tools					
Yes	34 (6.68)	5 (7.58)	19 (4.86)	10 (19.23)	<0.001
No	475 (93.32)	61 (92.42)	372 (95.14)	42 (80.77)	
Used Dirty Needles					
Yes	15 (2.95)	2 (3.03)	8 (2.05)	5 (9.62)	0.010
No	494 (97.05)	64 (96.97)	383 (97.95)	47 (90.38)	
Had Sex without Condoms					
Yes	277 (54.42)	28 (42.42)	210 (53.71)	39 (75.00)	0.002
No	232 (45.58)	38 (57.58)	181 (46.29)	13 (25.00)	
Had Sex with PWIDs without Using Condoms					
Yes	84 (16.50)	11 (16.67)	56 (14.32)	17 (32.69)	0.004
No	425 (83.50)	55 (83.33)	335 (85.68)	35 (67.31)	
Sold Sex					
Yes	30 (5.89)	0 (0.00)	18 (4.60)	12 (23.08)	<0.001
No	479 (94.11)	66 (100.00)	373 (95.40)	40 (76.92)	

[a]: Statistical Chi-square and Fisher Exact differences by class.

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