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Social and Individual Risk Determinants of HIV Testing Practices among Non-Injection Drug Users at High Risk for HIV/AIDS

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Abstract

HIV testing services and research among drug users has largely focused on injection drug users (IDUs); yet non-injection drug users (NIDUs) are also at increased risk for HIV due to high-risk sexual behaviors and overlapping networks with IDUs. This study examined drug use, sexual risk, and social network characteristics associated with recent HIV testing (testing within past year) among NIDUs. Interviewer-administered questionnaires were conducted among 418 NIDUs and log-binomial regression models were used to identify correlates of recent HIV testing. Prevalence ratios (PR) with 95% confidence intervals (CI) were reported. Nearly 97% of NIDUs reported having ever been tested for HIV and most participants (85.7%) indicated testing for HIV within the past year. Factors independently associated with recent HIV testing were higher educational attainment (PR: 1.86; 95% CI: 1.03, 3.34) and networks to discuss health and medical services (PR: 1.84; 95% CI: 1.06, 1.20). A prior positive sexually transmitted infection was associated with decreased likelihood of recent HIV test (PR: 0.43; 95% CI 0.25, 0.74). Identifying specific social network characteristics may be effective in facilitating HIV testing and prevention strategies targeting NIDUs.

Keywords

HIV testing; non-injection drug users; HIV/AIDS prevention; drug abuse; social support; social networks

INTRODUCTION

Routine HIV testing is one of the hallmarks of the Centers for Disease Control and Prevention's (CDC) "Advancing HIV Prevention Initiative"(2003). Prior studies have demonstrated that efforts to increase the number of individuals tested for HIV may potentially lead to the modification of high-risk sexual behaviors to reduce transmission,

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earlier diagnosis and treatment, and lower HIV/AIDS mortality (Weinhardt, Carey, Johnson and Bickham 1999, Wolitski, MacGowan, Higgins and Jorgensen 1997). Furthermore, the availability of rapid HIV testing has improved access to and utilization of testing in clinical and nonclinical settings and has decreased waiting times for results (Bowles et al. 2008). Despite the availability and relative ease of testing, approximately 25% of those infected with HIV in the U.S. are unaware of their status (Glynn and Rhodes 2005, Greenwald, Burstein, Pincus and Branson 2006, Heimer, Grau, Curtin, Khoshnood and Singer 2007). Moreover, a higher proportion of individuals who are unaware of their HIV status are high-risk illicit drug users (Strauss, Deren, Rindskopf and Falkin 2002).

Injection drug use remains a significant risk factor for HIV transmission, although according to the recent CDC HIV Surveillance Report (2009), the proportion of HIV cases attributable to injection drug use has been declining. Interventions targeting injection drug users (IDUs) such as sterile syringe deregulation through expansion of syringe exchange programs and expanded syringe access in pharmacies have been largely credited for the substantial reductions (Des Jarlais and Semaan 2008). Moreover, the growth of these interventions has led to concomitant increases in services such as voluntary HIV counseling and testing (Des Jarlais et al. 2011). Subsequently, HIV testing rates have increased among IDUs and some reports suggest higher testing rates among IDUs in comparison to the general population (Kellerman, Drake, Lansky and Kleven 2006). While injection drug use has been an important driver of the HIV epidemic, HIV prevention and testing strategies targeting non-injection drug use, which is more common and typically associated with elevated sexual risk, has received less attention.

The convergence of HIV prevalence among non-injection drug users (NIDUs) and IDUs are suggestive of the rising HIV prevalence among NIDUs (Des Jarlais and Semaan 2009, Neaigus, Miller, Gyarmathy and Friedman 2011, Strathdee and Sherman 2003). Recent studies have demonstrated that the overlap of sexual partnership between IDUs and NIDUs may be an important clue to understanding the increased prevalence (Howard and Latkin 2006, Jenness, Neaigus, Hagan, Murrill and Wendel 2010). Although sexual-risk reduction interventions targeting NIDUs and their sexual networks are emerging (Castor et al. 2010), it is possible that routine and frequent HIV testing may additionally contribute to elucidating the elevated HIV prevalence among NIDUs. However, the factors related to HIV testing among NIDUs are not clearly understood.

HIV testing research and prevention strategies have predominantly focused on IDUs (Heimer et al. 2007, Tobin, Tang, Gilbert and Latkin 2004), where having ever been tested and recent HIV testing (i.e. within the past 12 months) has been associated with prior history of incarceration, a history of STIs, and addiction care (Samet, Mulvey, Zaremba and Plough 1999, Tobin et al. 2004). Harm reduction interventions such as syringe exchange programs and concern about HIV exposure through injection drug use has also been associated with recent HIV testing (Grella, Campos and Anglin 1998, Heimer et al. 2007, Porter, Metzger and Scotti 2002, Samet et al. 1999, Tobin et al. 2004). Moreover, social network characteristics have been examined to further understand medical service utilization and HIV testing among IDUs (Knowlton, Hua and Latkin 2005, Tobin et al. 2004). Mechanisms linking social support networks and HIV testing include access to resources, social influence and interconnectedness (Latkin, Weeks, Glasman, Galletly and Albarracín 2010). Specific aspects of networks, namely structural (e.g. network density, composition of network, total network size), functional (e.g. emotional or informational), and relational (e.g. personal and relationship characteristics of network members) components may be important for understanding HIV testing patterns (House, Kahn, McLeod and Williams 1985, Knowlton et al. 2005). However, studies investigating these factors among high-risk NIDUs are limited.

Prevention strategies such as routine and frequent HIV testing play a critical role in the early detection of new infections. In an effort to build a knowledge base for understanding HIV testing patterns among NIDUs so targeted interventions can be developed, the purpose of this study is to examine patterns of HIV testing and identify drug use, sexual risk and social network characteristics associated with recent HIV testing.

METHODS

Study population and recruitment

The data for these analyses were obtained from the **Social Ties Associated with Risk of Transition into Injection Drug Use** (or “**START**”) study. START aims to determine the incidence of transition into injection drug use and seeks to identify risk factors (e.g. social network and social support characteristics) that may influence transition into injection drug use among young adult drug users in New York City (NYC). Details of the study are described in detail elsewhere (Rudolph et al. 2011). Briefly, START is comprised of two components: (1) an 18-month prospective study of heroin, crack and/or cocaine NIDUs only; and (2) a cross-sectional survey of recent-onset heroin and/or cocaine IDUs only. A combination of targeted street outreach (TSO) in NYC neighborhoods ethnographically mapped as areas of high drug use activity and Respondent-Driven Sampling (RDS) methods were used to recruit potential participants between July 2006 and June 2009. This analysis was limited to the baseline survey of NIDUs. NIDUs were eligible for the study if they were 18-40 years of age and were current users of noninjectable heroin, crack, and/or cocaine (at least 2-3 times per week). The study was approved by the Institutional Review Boards of Columbia University Mailman School of Public Health and the New York Academy of Medicine. All of the participants provided informed consent and were remunerated for their involvement in the study.

Measures

Interviewer-administered questionnaires were administered to eligible and consenting participants by trained study personnel. The questionnaire solicited information about sociodemographics, drug use and sexual risk behaviors, psychiatric conditions, and various social network characteristics. To measure HIV testing status, the following questions were asked: “Have you ever been tested for HIV or AIDS?”; “How many times have you been tested for HIV?”; “When was the last time you were tested for HIV?”; “What were the results?”; and, “Have you been told by a health care professional that you had AIDS?” The outcome for this study, recent HIV testing, was defined as whether or not a participant tested for HIV within the last 12 months.

The socio-demographic variables examined were age (continuous), gender, race/ethnicity (Hispanic, non-Hispanic black, and non-Hispanic white/other), educational attainment (high school diploma or higher, no high school diploma or less), level of income (> \$5,000 or \$5,000), history of incarceration (yes, no), history of juvenile detention (yes, no), and lifetime experience of discrimination (yes, no). Drug use variables included use of heroin, cocaine, or crack (yes, no) within the past 12 months and lifetime history of drug treatment (yes, no). Sexual risk behaviors included sexual partnerships (same-gender or opposite-gender sexual partner), traded sex for money or drugs within past 12 months (yes, no), condom use within the past 12 months (100% use, <100% use), number of sexual partners within the past 12 months, and history of positive sexually transmitted disease test (yes, no).

Similar to prior research (Barrera 1986, Knowlton and Larkin 2007), network characteristics were ascertained using a network inventory which asked for names or pseudonyms of members of the participants social support, sexual and drug-sharing networks (Knowlton et

al. 2005). Network functional components, including emotional and informational support, were assessed within the past year. Emotional support was represented by the following question: “Who could you talk to about personal or private matters?” Informational support was ascertained using three questions that queried health source (“Who could you ask for advice about health care or medical services?”), drug use and harm reduction (“Who could you talk to about issues related to drug use, for example drug treatment or how to use drugs safely?”), and social services (“Who could you get information about social services like housing, welfare, or social security?”). A list of network members was generated by asking the aforementioned questions and the responses were dichotomized such that individuals who indicated at least one name were considered to have support and individuals who did not list a name were categorized as not having support. A structural network characteristic was operationalized as the total social network size within the past year. Relational aspects referred to relationship characteristics of network members, more specifically, the number of IDUs in network, and the number of sexual partners who are IDUs.

Statistical analysis

The analyses were restricted to NIDUs who answered yes to ever having been tested for HIV and whose self-reported HIV status was negative prior to testing within the past 12 months. Descriptive statistics for socio-demographic background, drug use and treatment, sexual risk behaviors, and social network characteristics were stratified by recent HIV testing. To determine significant differences between recent and non-recent testers, nonparametric (i.e. Wilcoxon) tests were used to examine differences between means of continuous variables and chi-square tests were used to examine differences in frequencies for categorical variables. Log-binomial regression models were employed to identify factors independently associated with recent HIV testing. Inclusion of covariates selected for model building was based on reaching statistical significance in the bivariate analysis (p value

0.05). The final models were reduced by manual stepwise elimination, where variables that reached statistical significance (p value 0.05) were retained. Prevalence ratios with 95% confidence intervals were reported. All data management functions and statistical analyses were performed using SAS version 9.2.

RESULTS

Table 1 presents descriptive characteristics of HIV testing among NIDUs. Nearly 97% of NIDUs reported having ever been tested for HIV. Of those who were tested, 10.6% reported an HIV seropositive status and 4.0% indicated receiving the first positive HIV test within the past 12 months.

Socio-demographic background, drug use and treatment, sexual risk behavior, and network characteristics of the sample are presented by recent HIV test (Table 1). The sample of 418 NIDUs were predominantly male (71.1%), black (59.6%) or Hispanic (30.9%). In comparison to non-recent testers, recent testers were more likely to have attained a high school degree or higher, history of positive STI test, and report having informational social support networks to discuss drug use and harm reduction, health and medical services, or social services (all p-values 0.05).

Correlates of recent HIV test were examined and the results from the unadjusted and adjusted models are presented in Table 2. In the unadjusted models, high school education attainment (PR: 1.90; 95% CI: 1.15, 3.15), and having networks who discuss drug use and harm reduction (PR: 1.12; 95% CI: 1.03, 1.22), health and medical services (PR: 1.11; 95% CI: 1.02, 1.20), and social services (PR: 1.09; 95% CI: 1.01, 1.19) were associated with having an HIV test within the past 12 months. Individuals who had a history of prior positive STI (PR: 0.85; 95% CI: 0.74, 0.97) were less likely to have reported a recent HIV

test. In the final adjusted models, only educational attainment (PR: 1.86; 95% CI: 1.03, 3.34) and health and medical services network (PR: 1.84; 95% CI: 1.06, 1.20), and history of positive STI (PR: 0.43; 95% CI 0.25, 0.74) remained significant.

DISCUSSION

In this sample of NIDUs, approximately 97% reported ever testing for HIV and 85.7% reported HIV testing within the past 12 months. Of the socio-demographic variables analyzed, only educational attainment was associated with recent testing. Our analyses did not reveal any significant relationships between HIV testing and type of drug used or history of drug treatment. Sexual risk, specifically, individuals reporting prior positive STIs were less likely to be recent HIV testers. One of the strongest predictors of recent HIV testing was having a social network member to discuss information about health and medical services.

This high proportion of study participants who reported having ever been tested for HIV is consistent with previous reports of high levels of HIV testing in predominantly IDU populations (Heimer et al. 2007, Kellerman et al. 2006, Tobin et al. 2004). Closer inspection of specific patterns of testing such as frequent and recent testing demonstrate that our results diverge from the patterns observed in some prior studies. For example, Tobin et al found that only 54% of IDUs recruited from a sample in Baltimore City reported having ever been tested within the past 12 months (Tobin et al. 2004). Whereas Heimer et al found variations in the prevalence of HIV testing in the past year by city, ranging from 57.7% of IDUs in Springfield, MA to 78.5% of IDUs in New Haven, CT (Heimer et al. 2007). Several studies have highlighted the role of community characteristics in shaping HIV testing behaviors (Johns, Bauermeister and Zimmerman 2010, Taylor, Leibowitz, Simon and Grusky 2006). It is possible that “macro” level structures, namely, socio-political, economic, cultural context, and social institutions, may vary by place and subsequently influence the material resources and allocations (i.e. budgets devoted to HIV testing services) or social interconnectedness (i.e. interactions of organizations involved in the development and promotion of HIV testing) that may impact opportunities and attitudes HIV testing among high-risk populations (Latkin et al. 2010).

In contrast to prior reports, relatively high educational attainment (i.e. having a high school degree or higher), was one of the strongest predictors of having received an HIV test within the past 12 months among NIDUs in the present study. According to Andersen’s Behavioral Model of Health Services Use, educational attainment is characterized as a predisposing factor that can shape attitudes towards service use as well as enabling and need factors (Andersen 1995). Although this protective association has not always been demonstrated in prior studies among IDUs (Brown, O’Grady, Farrell, Flechner and Nurco 2001, Tobin et al. 2004), it is plausible that formal education can operate to increase knowledge and awareness of safe behaviors, to act on health information received, access, and utilize health services (Hasnain, Levy, Mensah and Sinacore 2007). The findings from this study about educational attainment more importantly suggest the vulnerability of those who are most disadvantaged as a result of lower socioeconomic status.

Non-clinical social settings such correctional facilities are recognized as important venues for HIV and STI prevention services. For example, correctional facilities are increasingly offering HIV testing during medical intake. However, our results are not consistent with prior studies among IDUs that have demonstrated an association between prior history of incarceration and recent HIV testing (Tobin et al. 2004). One explanation could be that in the present study, lifetime history of incarceration was measured as opposed to having been incarcerated within the past 12 months, as measured in the Tobin et al study.

The results from the few studies that have investigated the relationship between a history of positive STI and having ever been tested for HIV or recent HIV testing across samples of highrisk groups including drug-users and men who have sex with men (MSM), are not clear and consistent. One study examining the correlates of HIV testing among drug users (including IDUs and NIDUs) found a positive relationship between having ever had an HIV test and history of STI (Samet et al. 1999). Similar findings were revealed in another study evaluating factors associated with recent HIV testing among young MSMs (MacKellar et al. 2006). However, among a sample of IDUs, a significant relationship between recent HIV testing and prior positive STI was not observed in the final model (Tobin et al. 2004). In the present study, prior positive STI test was associated with a decreased likelihood of recent HIV test. The differences in findings may be related, in part, to differences in the populations sampled and the capability of various STI screening services to reach specific risk groups. STIs such as herpes simplex virus 2 may increase the transmission or acquisition of HIV. Ensuring that individuals who have had a prior STI are engaged in effective counseling which sensitizes one to the heightened risk of HIV, encourages reductions in sexual risk behaviors, and seeking treatment for the STI may influence HIV testing patterns and impact HIV transmission.

Identifying social networks that are either health-promoting or health-damaging is essential to HIV prevention. Our finding that functional support, specifically a source that provides information about health and medical services predicted HIV testing parallels the results from studies demonstrating the role of social networks in influencing voluntary HIV testing and counseling. Prior studies among drug users have shown there are several factors that are influenced by a complex network of factors that influence one's decision to test. For example, one study showed that interactions with an HIV prevention outreach worker or having a case manager was associated with a greater likelihood of having a recent HIV test (Tobin et al. 2004). Latkin and colleagues have postulated social interconnectedness impacts the promotion of HIV testing. More specifically, the interpersonal connections with resources that provide referrals and information or individuals who act as informal sources of social influence may affect HIV testing behavior (Downing et al. 2001, Latkin et al. 2010). Although a non-significant protective association between drug use and harm reduction and social services network support was observed, it is possible that these service linkages may have the potential to additionally serve as a source of information about HIV testing. Relational social network characteristics, for example, high-risk social ties, such as the number of IDUs or the number of IDU sexual partners reported in one's social network were included as potential factors that may obstruct an individual from seeking a recent HIV testing. However, we did not find an association between HIV testing and relational or structural network characteristics. Although having an IDU network may play a vital role in the risk of transmission of HIV or engagement in high-risk sexual behaviors (Pilowsky et al. 2007), it may not necessarily negatively affect the decision-making process for one to seek an HIV test. For example, it is plausible that due to interventions targeting IDUs to get tested, an IDU network may influence peers to get tested. The role of relational networks and potential influence on influence HIV testing patterns merits additional study.

The interpretation of this data must take into account several study limitations. First, this is a cross-sectional study design that precludes us from drawing inferences regarding temporality. Second, self-report of HIV testing history was used and self-reported testing behavior was not validated. Over-reporting of HIV testing history is plausible and may have influenced our estimates. However, reliable and valid reporting of HIV testing history and infection status among injection drug users and crack cocaine smokers has been previously documented (Fisher, Reynolds, Jaffe and Johnson 2007). Moreover, the testing prevalence estimates are generally comparable with previous reports of HIV testing among drug users in NYC, but may not be generalizable to other cities that do not have as many venues for

testing. We did not have an indicator of repeat testing within the past, which is as important as a recent test for individuals who are considered high-risk to monitor their HIV status. Although the results provide a strong indication that NIDUs are getting tested for HIV, our study is limited because we were not able to assess repeat testing within a specific time period. Despite these limitations, to our knowledge, this is the first study to examine HIV testing patterns among a sample of NIDUs characterizing social network characteristics and an important first step towards elucidating patterns of HIV testing among NIDUs.

In conclusion, these data suggest that there may be different factors influencing HIV testing patterns between IDUs and NIDUs and underscore the need for additional research and prevention strategies which specifically target NIDUs. The efforts to increase HIV testing among this population must not only consider individual-level factors but social support networks and more HIV testing opportunities across various venues that reach NIDUs. Connecting people with organizations and agencies where there is integrated information available about health, social services and drug treatment may facilitate frequent and regular HIV testing when offered in these settings. Additionally, peer-driven interventions targeting both IDUs and NIDUs may provide another opportunity where information about HIV testing could be encouraged and disseminated. Although, HIV testing alone is insufficient to diminish risky sexual behaviors or decrease the transmission of HIV (Ziek, Goldstein, Beardsley, Deren and Tortu 2000), identifying salient factors that may impede or promote HIV testing is an imperative step towards reducing the burden of HIV/AIDS among high-risk vulnerable populations.

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Table 1

Self-reported HIV testing, prevalence and recent testing among seropositive non-injecting drug users

	N	%
Ever tested		
No	15	3.1
Yes	470	96.9
HIV self-reported serostatus ^a		
Negative	416	88.5
Positive	50	10.6
Unknown	4	0.9
HIV seropositive		
First positive HIV test < 12 months	2	4
First positive HIV test ≥ 12 months	48	96

^aSerostatus among those those who report ever been tested for HIV

Selected sample characteristics and bivariate analysis of recent HIV test by sociodemographic, drug use, sexual risk, and network characteristics among non-injecting drug users

Table 2

	Total Sample ^a		Last HIV test		12 months		Last HIV test > 12 months		p- value ^b
	N	%	N	%	N	%	N	%	
SOCIODEMOGRAPHIC									
Age (mean, SD)	418		358	85.7	60	14.4			
Sex									
Male	295	71.1	250	70.2	45	76.3			0.5193
Female	120	28.9	106	29.8	14	23.7			0.3427
Race/ethnicity									
Hispanic	129	30.9	113	31.6	16	26.7			0.2428
Black	249	59.6	208	58.1	41	68.3			
White/Other	40	9.6	37	10.3	3	5.0			
Educational attainment									0.0102
HS diploma or higher	211	50.6	172	48.0	39	66.1			
< HS diploma	206	49.4	186	52.0	20	33.9			
Income									0.4517
> \$5,000	275	74.3	240	75.0	35	70.0			
\$5,000	95	25.7	80	25.0	15	30.0			
History of incarceration									0.2441
Yes	313	82.6	269	83.5	44	77.2			
No	66	17.4	53	16.5	13	22.8			
History of juvenile detention									0.0995
Yes	93	24.7	74	76.9	19	33.3			
No	284	75.3	246	23.1	38	66.7			
Lifetime experience of discrimination									0.6045
Yes	208	49.8	180	50.3	28	46.7			
No	210	50.2	178	49.7	32	53.3			
DRUG USE ^c AND TREATMENT ^d									

	Total Sample ^a		Last HIV test 12 months		Last HIV test > 12 months		p-value ^b
	N	%	N	%	N	%	
Heroin							0.6597
Yes	176	43.1	149	42.7	27	45.8	
No	232	56.9	200	57.3	32	54.2	
Crack							0.2071
Yes	332	79.4	288	80.5	44	73.3	
No	86	20.6	70	19.5	16	26.7	
Cocaine							0.2544
Yes	291	70.5	245	69.4	46	76.7	
No	122	29.5	108	30.6	14	23.3	
Drug treatment							0.601
Yes	299	71.5	250	69.8	49	81.7	
No	119	28.5	108	30.2	11	18.3	
SEXUAL RISK BEHAVIORS							
Sexual partnership							0.5983
Opposite-gender sexual partners	317	90.3	269	90.0	48	92.3	
Same-gender sexual partners	34	9.7	30	10.0	4	7.7	
Trade sex for money or drugs ^e							0.9320
Yes	118	29.3	101	29.4	17	28.8	
No	285	70.7	243	70.6	42	71.2	
Condom use ^e							0.5217
100% use	118	28.9	103	29.5	15	25.4	
< 100% use	290	71.1	246	70.5	44	74.6	
Number of sex partners ^e (mean, SD)	1.4	(1.6)	1.4	(1.6)	1.7	(1.7)	
History of positive STI test							0.0026
Yes	79	25.6	60	22.6	19	44.2	
No	230	74.4	206	77.4	24	55.8	
Lifetime number of HIV test (mean, SD)	5.4	(5.6)	5.7	(5.7)	4.5	(5.0)	0.1389
NETWORK CHARACTERISTICS ^f							
Structural							0.2977

	Total Sample ^a		Last HIV test 12 months		Last HIV test > 12 months		p-value ^b
	N	%	N	%	N	%	
Total number of personal networks	5.5	(5.6)	3.6	(2.9)	4.0	(2.8)	
<i>Functional^c</i>							
Emotional support							
Discuss personal or private matters	132	31.2	113	31.8	19	31.7	0.9798
Informational							
Drug use and harm reduction	233	56.1	209	58.9	24	40.0	0.0064
Health and medical services	227	54.7	203	57.2	24	40.0	0.0134
Social services	239	57.6	212	59.7	27	45.0	0.0329
<i>Relational</i>							
Number of people who have IDUs in network	22	5.7	19	5.7	3	5.2	0.8629
Number of people who have IDU sexual partners	17	4.4	15	4.6	2	3.5	0.7003
<i>Recruitment Strategy^h</i>							0.4689
RDS	305	74.6	258	73.9	47	78.3	
TSO	104	25.4	91	26.1	13	21.7	

^aSome N's may not add to total due to missing data

^bP-value represents chi-square test comparing those with frequent HIV test and those who did not have a frequent HIV test

^cHistory of reported drug use within the past 12 months

Same-gender sex partnerships include men who report sex with men (MSM) and women who report sex with women (WSW)

^dLifetime history of drug treatment

^eWithin the past 12 months

^fSocial network variables account for the past 12 months

^gNumbers in the total sample column reflect the number of people who indicated having the type of support

^hRespondent-Driven Sampling (RDS); targeted street outreach (TSO)

Table 3

Unadjusted and adjusted log-binomial regression models for recent HIV test (N=418)

	Unadjusted		Adjusted	
	PR	95% CI	PR	95% CI
SOCIODEMOGRAPHIC				
Educational attainment				
HS diploma or higher	1.90	1.15, 3.15	1.86	1.03, 3.34
< HS diploma	1.00		1.00	
SEXUAL RISK BEHAVIORS				
History of positive STI test				
Yes	0.85	0.74, 0.97	0.43	0.25, 0.74
No	1.00		1.00	
NETWORK CHARACTERISTICS				
<i>Functional</i>				
Drug use and harm reduction				
Yes	1.12	1.03, 1.22		
No	1.00			
Health and medical services				
Yes	1.11	1.02, 1.20	1.84	1.06, 3.22
No	1.00		1.00	
Social service				
Yes	1.09	1.00, 1.19		
No	1.00			

^a Social network variables account for the past 12 months