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The "Safe Sex" Conundrum: Anticipated Stigma From Sexual Partners as a Barrier to PrEP Use Among Substance Using MSM Engaging in Transactional Sex

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Abstract

Pre-exposure prophylaxis (PrEP) is efficacious for HIV prevention when taken consistently; however, barriers to PrEP use are poorly understood among individuals who could benefit from PrEP, including men who have sex with men (MSM) who engage in transactional sex (i.e., sex exchanged for money or drugs). Two hundred and thirty-seven HIV-uninfected, PrEP-naive MSM reporting concurrent substance dependence and sexual risk completed a questionnaire on PrEP use barriers. Barriers to PrEP use for MSM who engaged in recent transactional sex (22 %) versus

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Compliance with Ethical Standards

Conflict of Interest KBB declares that she has no conflict of interest. CEO declares that she has no conflict of interest. JAM declares that she has no conflict of interest. EFC declares that she has no conflict of interest. KHM declares that he has no conflict of interest. SAS declares that he has no conflict of interest. MJM declares that he has no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

those who had not were compared using an ecological framework. Individual (e.g., HIV stigma, substance use) and structural (e.g., economic, healthcare) barriers did not differ ($p > 0.05$). MSM who recently engaged in transactional sex were more likely to report that anticipated stigma from primary and casual partners would be barriers to PrEP use. Assessing recent transactional sex may help identify men who may need additional counseling to avoid anticipated stigma so they can integrate PrEP into their lives.

Keywords

Men who have sex with men; HIV; Pre-exposure prophylaxis; Prevention

Introduction

In the United States (US), HIV prevalence among men who have ever engaged in transactional sex is estimated to be 20 % [1], and men who engage in transactional sex with other men (i.e., sex in exchange for money, gifts, or favors) have been shown to have both increased HIV prevalence [2] and incidence compared to other men who have sex with men (MSM) [3]. MSM who engage in transactional sex are exposed to factors that place them uniquely at risk due to the introduction of an economic transaction into a sexual relationship. These risks include individual (e.g., elevated burden of psychosocial problems), interpersonal (e.g., high risk primary and transactional sex partners, unequal power dynamics), and structural (e.g., sex work stigma, victimization, homelessness, lack of health insurance) factors [4–6].

Pre-exposure prophylaxis (PrEP), a daily oral antiretroviral pill taken by HIV uninfected, at-risk individuals, is an efficacious HIV prevention tool [7–11]. However, the same factors that put MSM at risk for HIV may present challenges to PrEP uptake and adherence. Barriers to PrEP uptake and adherence have been examined among MSM, and include cost, perceived efficacy, concerns about side effects and not wanting to take a daily pill [12–15]. However, studies examining barriers to PrEP initiation and adherence are limited among sub-groups of high-risk MSM who may benefit from it the most, including those who are dependent on alcohol/drugs and those who engage in transactional sex [16]–[18]. Understanding perceptions of PrEP and its use among MSM with different risk profiles is necessary for the development of contextually relevant PrEP promotion strategies targeted to unique sub-groups of MSM.

In this secondary data analysis of a sample of substance-dependent MSM with a high prevalence of recent transactional sex, we compared high-risk MSM who engage in transactional sex to those who do not engage in transactional sex across a wide range of multilevel, perceived barriers to PrEP use.

Methods

Participants and Procedures

Between September 2012 and July 2013, a cross-sectional survey to assess demographics, sexual behaviors, psychosocial risk and perceived PrEP use and adherence facilitators/

barriers was conducted with MSM who: 1) reported condomless anal sex in the context of stimulant (crack/cocaine and crystal methamphetamine) and/or alcohol use, and 2) met clinical criteria for substance dependency. All participants were over the age of 18, born biologically male, identified as male at the time of enrollment and HIV-negative at the time of enrollment (as con-firmed by antibody test). Details of recruitment are provided elsewhere [16]. In brief, 254 men were recruited at dance clubs and bars that are frequented by gay, bisexual men and other MSM in the greater-Boston area, through sexual partner-meeting websites for MSM, and at LGBT-oriented health centers and community-based organizations in Massachusetts.

Study visits took place in a private room at Fenway Health, and the survey was administered on desktop computers via Qualtrics. The survey included both self-administered (for highly sensitive sexual behavior and substance use questions) and interviewer-administered sections. All study procedures were approved by the Institutional Review Board at Fenway Health.

Measures

In a prior phase of this study, formative qualitative research was conducted with this population, and informed the development of the quantitative assessment and the conceptual framework for this analysis [18].

Socio-Demographic Characteristics—Race and ethnicity were categorized as White, Black, Asian, Latino and Other. Sexual orientation was categorized as homosexual/gay, bisexual, heterosexual/straight, or other. Relationship status was categorized as single, in a monogamous relationship or married/civil union, or in a non-monogamous relationship/ other. Housing status was categorized as having unstable housing (e.g., living in a hotel, boarding house, group home, temporarily staying with family, friends or sex partners, in the street, or having no fixed address) in the previous three months or not. Individual pre-tax annual income was categorized as less than $12,000, $12,000–$23,999, $24,000–$59,999, and $60,000 or more. Education was categorized as having a high school diploma or less, some college, or college degree or higher. Health insurance coverage was determined by asking participants if they currently had any form of health insurance or were covered under a health plan.

Alcohol and Stimulant Dependence—Alcohol and/or stimulant dependence in the last 3 months was assessed using Parts J and K of the Mini International Neuropsychiatric Interview [19], and categorized as stimulant dependence (with or without alcohol use) versus alcohol dependence (with no stimulant dependence).

Transactional Sex—Participants were asked whether they received money or drugs for any sexual encounter in the past 3 months.

Hypothetical Barriers to PrEP Use—The assessment included hypothetical scenarios to examine perceived, multilevel barriers to PrEP use. Economic barriers included: unwillingness to take PrEP if it is not free and unwillingness to take PrEP if insurance will not pay for it. Healthcare-related barriers included: comfort discussing sexual behaviors with

medical providers, worry that providers will judge sexual behaviors, having discussed sexual behaviors with providers in the past year, willingness to take PrEP if they have to discuss sexual behaviors with medical provider, and preference for getting PrEP from a provider other than their primary care provider. Partnership barriers included: unwillingness to tell a main partner about PrEP use because of concern that they would find out about sex outside the relationship, a main partner would be unsupportive of PrEP use, worry that sex life would change if a main partner found out about PrEP use, a main partner would think participant has HIV if took PrEP, casual partners would be unsupportive of PrEP use, casual partners would judge if used PrEP, casual partners would think participant has HIV if took PrEP, and casual partners would not understand motivations for taking PrEP. Individual-level barriers included: fear that HIV stigma would affect PrEP use and concern that substance use would affect ability to take PrEP as prescribed. All barriers were presented with yes/no response options.

Statistical Methods

The distribution of sociodemographic characteristics by involvement in transactional sex was calculated with means and standard deviations for continuous variable and proportions for categorical variables. Wilcoxon rank sum tests and Fisher's exact tests were used to test for differences in these characteristics by involvement in transactional sex. A series of logistic regression models were used to estimate the relationship between involvement in transactional sex and each perceived barrier to PrEP use: (1) bivariate, (2) adjusting for age, sexual identity, race/ethnicity, education, housing situation, relationship status, income, and health insurance status; and (3) additionally adjusting for primary substance used in order to assess robustness of results given the potential for collinearity between transactional sex and substance used. Potentially confounding variables were selected for inclusion in multivariable models a priori according to hypothesized joint predictors of potential barriers to PrEP use and transactional sex. Missing data was minimal (less than 2 %) and complete-case analyses were used. All analyses were run in Stata 13.1 (Stata-Corp, College Station, TX).

Results

Of 254 study participants, four did not respond to questions on transactional sex, and 13 reported previous PrEP use in the context of clinical trials and were excluded from this analysis. Of the 237 participants included in the analytic sample, 51 (21.5 %) participants reported having received money or drugs in exchange for sex in the previous 3 months. Table 1 lists descriptive characteristics by recent involvement in transactional sex. MSM who engaged in transactional sex were significantly less likely to identify as gay/homosexual, and more likely to identify as bisexual compared to other MSM. Compared to other MSM, MSM who engaged in transactional sex were less likely to identify as White and more likely to identify as Black. Compared to other MSM, MSM who engaged in transactional sex had lower education, more often earned less than $12,000 annually, more often reported unstable housing in the past 3 months, and more often were dependent on stimulants rather than on alcohol only.

Table 2 lists results of logistic regression models assessing the association between transactional sex and perceived barriers to PrEP use at the structural (economic and healthcare), partnership and individual levels.

Although bivariate analyses suggested an association between worry that healthcare providers would adversely judge sexual behaviors and preference for obtaining PrEP from provider other than primary care provider, after adjustment for covariates, there were no significant associations between transactional sex and economic or healthcare-related barriers to PrEP use (see Table 2).

Compared to MSM not actively engaged in transactional sex, MSM who recently engaged in transactional sex more often reported the following perceived barriers: (1) need to conceal PrEP use from a primary partner; (2) PrEP use would have a negative impact on sex-life with a primary partner if this person became aware of it; and (3) fear that a primary partner would think they were HIV-infected due to PrEP use. Similarly, MSM who recently engaged in transactional sex were more concerned that casual partners would think negatively of them if they took PrEP and that casual partners would question their motivations for taking PrEP (see Table 2).

Finally, although MSM who recently engaged in transactional sex were more likely than MSM who did not recently engage in transactional sex to report that they anticipated their substance use would affect their ability to take PrEP in bivariate analysis, this association did not remain after adjustment for substances used.

Discussion

While demonstration projects have revealed high levels of PrEP uptake and adherence among MSM [20, 21], barriers to PrEP use may be more prevalent and unique for high-risk sub-groups of MSM, including those who engage in transactional sex. In this sample of substance-dependent MSM, over 20 % of participants reported being paid for sex with a man in the past 3 months. Importantly, participants who reported engagement in transactional sex were less likely to identify as gay, more likely to identify as a racial minority, reported lower socioeconomic status and were more likely to be dependent on stimulants, suggesting that traditional messages and interventions for MSM, particularly those who identify as gay, that do not account for these complex risk factors may not be appropriate or effective for this subgroup [2]. Rather, it is important to understand the differences in perceived barriers to PrEP use in high-risk MSM who engaged in transactional sex in order to develop culturally appropriate and effective, evidence-based PrEP interventions.

Using an ecological framework to examine a wide range of multilevel barriers to PrEP use, perceived partnership-level barriers were revealed to be more common among MSM who engaged in transactional sex compared to other high-risk, substance-dependent MSM. MSM who engaged in transactional sex were more likely to report concerns that both main partners and casual partners would find out about their PrEP use and not understand or support it as barriers to PrEP use. These concerns may be due to worries that a partner would find out about their involvement in sex work if PrEP use was disclosed [18]. This suggests

that stigma regarding PrEP use may be a substantial barrier, particularly for MSM who engage in transactional sex and may feel that disclosure would impact their ability to do sex work and their economic livelihood [22].

Interestingly, we did not find any significant differences in structural or individual-level barriers to PrEP use between MSM who engaged in transactional sex and those who did not. This contradicts prior qualitative work by Underhill et al. (2015), which found that medical mistrust and healthcare discrimination were important barriers for PrEP initiation among MSM who engage in transactional sex compared to other MSM [17]. These contradictory findings may be due to differences in samples, as all the participants in the current study were very high-risk due to the eligibility criteria (i.e., reported condomless anal sex in the context of stimulant and/or alcohol use and met definition of substance use dependence).

While we did not find an association between transactional sex and HIV stigma as a barrier to PrEP use, we did not assess stigma specific to transactional sex or substance use, which may be more relevant as a barrier to PrEP use and healthcare access for this population [23, 24]. In fact, Underhill et al. found that stigma associated with substance use was prevalent among MSM who engage in transactional sex, and that it was more commonly cited as a barrier to healthcare access and PrEP initiation than sexual behavior and HIV risk-related stigma [17]. Future studies examining barriers to PrEP use should consider additional forms of stigma.

These findings should be understood in the context of a number of potential limitations. First, the small total number of individuals who reported recent transactional sex limited our ability to adjust for additional confounders and explore interactions. Similarly, there may be residual confounding due to imprecise measurement of potential confounders (e.g., public vs. private insurance status) or unmeasured confounding. Additionally, given that this is a secondary data analysis and not the primary aim of the study, we were not able to examine barriers specific to sex work or other important covariates. Next, given that this study was conducted prior to federal clinical practice guidelines for PrEP being published, we were only able to assess *hypothetical* barriers to PrEP utilization. Finally, while the inclusion of only high-risk, substance-dependent MSM limits potential confounding by level of risk, it also limits the generalizability of our findings to other subgroups.

Unique perceived barriers to PrEP use existed for MSM who recently engaged in transactional sex, primarily based on concerns that PrEP would adversely affect primary and casual partner perceptions. These barriers differed from MSM not engaged in transactional sex, but with high sexual and substance use risk, despite adjustment for potential socioeconomic confounders (e.g., income, education, insurance) and substance used (i.e., stimulants vs. alcohol). Future research is needed to confirm these findings given that PrEP has become more widely available; however, this study suggests that assessing recent transactional sex among MSM who could benefit from PrEP and providing culturally relevant interventions for these subgroups may help to address unique barriers to PrEP uptake and potentially adherence.

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References

1. Oldenburg CE, Perez-Brumer AG, Reisner SL, et al. Global burden of HIV among men who engage in transactional sex: a systematic review and meta-analysis. PLoS One. 2014; 9(7):e103549. [PubMed: 25068720]
2. Oldenburg CE, Perez-Brumer AG, Reisner SL, Mimiaga MJ. Transactional sex and the HIV epidemic among men who have sex with men (MSM): results from a systematic review and meta-analysis. AIDS and Behav. 2015; 19(12):2177–83.
3. Weber AE, Craib KJ, Chan K, et al. Sex trade involvement and rates of human immunodeficiency virus positivity among young gay and bisexual men. Int J Epidemiol. 2001; 30(6):1449–54. [PubMed: 11821362]
4. Baral SD, Friedman MR, Geibel S, et al. Male sex workers: practices, contexts, and vulnerabilities for HIV acquisition and transmission. Lancet. 2014; 385(9964):260–73. [PubMed: 25059939]
5. Oldenburg CE, Perez-Brumer AG, Biello KB, et al. Transactional sex among men who have sex with men in Latin America: economic, sociodemographic, and psychosocial factors. Am J Public Health. 2015; 105(5):e95–102.
6. Baral S, Logie CH, Grosso A, Wirtz AL, Beyrer C. Modified social ecological model: a tool to guide the assessment of the risks and risk contexts of HIV epidemics. BMC Public Health. 2013; 13:482. [PubMed: 23679953]
7. Baeten JM, Donnell D, Ndase P, et al. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. N Engl J Med. 2012; 367(5):399–410. [PubMed: 22784037]
8. Grant RM, Lama JR, Anderson PL, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. N Engl J Med. 2010; 363(27):2587–99. [PubMed: 21091279]
9. Thigpen MC, Kebaabetswe PM, Paxton LA, et al. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. N Engl J Med. 2012; 367(5):423–34. [PubMed: 22784038]
10. Van Damme L, Corneli A, Ahmed K, et al. Preexposure prophylaxis for HIV infection among African women. N Engl J Med. 2012; 367(5):411–22. [PubMed: 22784040]
11. Grant, RMV., Amico, R. Drug detection during open-label extension of the iPrEx trial indicates sustained and appropriate interest in PrEP among men who have sex with men. 7th IAS Conference on HIV Pathogenesis Treatment and Prevention; 2013.
12. Crosby RA, Geter A, DiClemente RJ, Salazar LF. Acceptability of condoms, circumcision and PrEP among young black men who have sex with men: a descriptive study based on effectiveness and cost. Vaccines (Basel). 2014; 2(1):129–37. [PubMed: 26344471]
13. Golub SA, Gamarel KE, Rendina HJ, Surace A, Lelutiu-Weinberger CL. From efficacy to effectiveness: facilitators and barriers to PrEP acceptability and motivations for adherence among MSM and transgender women in New York City. AIDS Patient Care STDS. 2013; 27(4):248–54. [PubMed: 23565928]
14. Bauermeister JA, Meanley S, Pingel E, Soler JH, Harper GW. PrEP awareness and perceived barriers among single young men who have sex with men. Curr HIV Res. 2013; 11(7):520–7. [PubMed: 24476355]
15. Goedel WC, Halkitis PN, Greene RE, Duncan DT. Correlates of awareness of and willingness to use pre-exposure prophylaxis (PrEP) in gay, bisexual, and Other men who have sex with men who use geosocial-networking smartphone applications in new york city. AIDS Behav. 2016:1–8. [PubMed: 26370101]
16. Oldenburg CE, Mitty JA, Biello KB, et al. Differences in attitudes about HIV pre-exposure prophylaxis use among stimulant versus alcohol using men who have sex with men. AIDS and Behav. 2015:1–10.

17. Underhill K, Morrow KM, Colleran C, et al. A qualitative study of medical mistrust, perceived discrimination, and risk behavior disclosure to clinicians by US male sex workers and other men who have sex with men: implications for biomedical HIV prevention. J of Urban Health. 2015; 92(2):667–86. [PubMed: 25930083]

18. Mimiaga MJ, Closson EF, Kothary V, Mitty JA. Sexual partnerships and considerations for HIV antiretroviral pre-exposure prophylaxis utilization among high-risk substance using men who have sex with men. Arch Sex Behav. 2014; 43(1):99–106. [PubMed: 24243002]

19. Lecrubier Y, Sheehan D, Weiller E, et al. The mini international neuropsychiatric interview (MINI). a short diagnostic structured interview: reliability and validity according to the CIDI. European psychiatry. 1997; 12(5):224–31.

20. Cohen SE, Vittinghoff E, Bacon O, et al. High interest in pre-exposure prophylaxis among men who have sex with men at risk for HIV infection: baseline data from the US PrEP demonstration project. J Acquir Immune Defic Syndr. 2015; 68(4):439–48. [PubMed: 25501614]

21. Liu AY, Cohen SE, Vittinghoff E, et al. Preexposure prophylaxis for HIV infection integrated with municipal- and community-based sexual health services. JAMA Intern Med. 2016; 176(1):75–84. [PubMed: 26571482]

22. Herron PD. Ethical implications of social stigma associated with the promotion and use of pre-exposure prophylaxis for HIV prevention. LGBT Health. 2016; 3(2):103–8. [PubMed: 26859191]

23. Gwadz M, de Guzman R, Freeman R, et al. Exploring how substance use impedes engagement along the HIV Care continuum: a qualitative study. Front Public Health. 2016; 4:62. [PubMed: 27092300]

24. van Boekel LC, Brouwers EPM, van Weeghel J, Garretsen HFL. Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: systematic review. Drug Alcohol Depen. 2013; 131(1–2):23–35.

Table 1

Descriptive characteristics of study sample (N = 237)

	Engaged in transactional sex, Last 3 months (N = 51)	Did not engage in transactional sex, Last 3 months (N = 186)	P value
Age (mean, SD)	35.6 (9.8)	33.3 (11.4)	0.07
Sexual identity			
Homosexual/gay	24 (47.0 %)	140 (75.3 %)	0.001
Bisexual	25 (49.0 %)	41 (22.0 %)	
Heterosexual/straight	1 (2.0 %)	1 (0.5 %)	
Other	1 (2.0 %)	4 (2.2 %)	
Race			
White	24 (47.1 %)	126 (67.7 %)	0.04
Black	13 (25.5 %)	23 (12.4 %)	
Asian	1 (2.0 %)	4 (2.2 %)	
Latino	9 (17.6 %)	27 (14.5 %)	
Other	4 (7.8 %)	6 (3.2 %)	
Education			
High school or less	19 (37.3 %)	22 (11.8 %)	<0.001
Some college	17 (33.3 %)	63 (33.9 %)	
College degree or higher	15 (29.4 %)	101 (54.3 %)	
Unstable housing, past 3 months	26 (47.1 %)	28 (15.1 %)	<0.001
Relationship status			
Single	34 (66.7 %)	127 (68.3 %)	0.39
Married/civil union/monogamous	14 (27.4 %)	38 (20.4 %)	
Non-monogamous/other	3 (5.9 %)	21 (11.3 %)	
Annual income			
<$12 000	29 (56.9 %)	48 (26.1 %)	<0.001
$12,000–$23,999	11 (21.6 %)	31 (16.8 %)	
$24,000–$59,999	7 (13.7 %)	75 (40.8 %)	
$60,000+	4 (7.8 %)	30 (16.3 %)	
Any health insurance	49 (96.1 %)	170 (91.4 %)	0.38
Stimulant user (vs alcohol)	45 (88.2 %)	70 (37.6 %)	<0.001

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Table 2

Odds of reporting different multilevel barriers to PrEP utilization comparing MSM who engaged in transactional sex to MSM who did not engage in transactional sex (n = 237)

	N (%)	Bivariate		Multivariable[a]		Multivariable[b]	
		OR (95 % CI)	P- value	AOR (95 % CI)	P- value	AOR (95 % CI)	P- value
Structural: economic barriers							
Will not take PrEP if it is not free	85 (35.3 %)	0.87 (0.45–1.67)	0.67	0.87 (0.40–1.87)	0.72	0.82 (0.37–1.84)	0.63
Will not take PrEP if insurance will not pay for it	186 (77.2 %)	0.51 (0.25–1.02)	0.06	0.55 (0.24–1.30)	0.18	0.64 (0.25–1.61)	0.34
Structural: healthcare-related barriers							
Comfortable discussing sexual behaviors with medical providers	185 (76.8 %)	0.62 (0.31–1.24)	0.18	1.60 (0.65–3.94)	0.31	1.60 (0.62–4.10)	0.33
Worry that providers will judge sexual behaviors	65 (27.0 %)	3.35 (1.74–6.44)	<0.001	1.53 (0.69–3.40)	0.30	1.68 (0.71–3.97)	0.23
Discussed sexual behaviors with providers in past year	145 (60.2 %)	0.61 (0.33–1.15)	0.13	1.61 (0.69–3.78)	0.27	1.67 (0.68–4.09)	0.34
Willing to take PrEP if have to discuss sexual behaviors with medical provider	225 (93.4 %)	1.84 (0.40–8.44)	0.43	3.78 (0.60–23.9)	0.16	3.31 (0.50–22.0)	0.22
Would prefer to get PrEP from provider other than primary care provider	112 (46.5 %)	2.33 (1.23–4.41)	0.009	1.49 (0.69–3.23)	0.31	1.38 (0.61–3.11)	0.44
Partnership-related barriers							
Have a main partner[c]	103 (42.7 %)	1.54 (0.83–2.87)	0.17	1.73 (0.83–3.63)	0.14	1.69 (0.78 –3.66)	0.18
Would not tell main partner about PrEP because of concern that they would find out about sex outside relationship[c]	34 (32.7 %)	3.50 (1.38–8.87)	0.008	3.93 (1.09–14.2)	0.04	10.1 (1.85–55.2)	0.008
Concern that main partner would be unsupportive of PrEP use[c]	19 (18.3 %)	3.49 (1.23 to 9.95)	0.02	2.08 (0.48 to 8.93)	0.33	2.19 (0.42 to 11.6)	0.36
Worry that sex life would change if main partner found out about PrEP use[c]	31 (29.8 %)	3.22 (1.27–8.19)	0.01	3.68 (1.04–13.0)	0.04	5.55 (1.25–24.6)	0.02
Main partner would think I have HIV if I took PrEP[c]	33 (32.0 %)	4.65 (1.80–12.0)	0.001	3.88 (1.05–14.4)	0.04	6.98 (1.51–32.3)	0.01
Casual partners would be unsupportive of PrEP use	38 (15.8 %)	2.68 (1.26–5.70)	0.01	2.92 (1.12–7.65)	0.03	2.14 (0.78–5.85)	0.14
Casual partners would judge if used PrEP	101 (41.9 %)	2.99 (1.57–5.68)	0.001	2.64 (1.25–5.58)	0.01	2.70 (1.22–5.96)	0.01
Casual partners would think I have HIV if I took PrEP	126 (52.3 %)	1.91 (1.01–3.64)	0.048	1.52 (0.71–3.25)	0.28	1.77 (0.79–3.97)	0.17
Casual partners would not understand motivations for taking PrEP	102 (42.3 %)	3.26 (1.70–6.22)	<0.001	2.45 (1.17–5.15)	0.02	2.56 (1.17–5.63)	0.02
Individual-Level Barriers							
Fear that HIV stigma would affect PrEP use	71 (29.5 %)	1.90 (1.00–3.63)	0.050	1.38 (0.64–2.94)	0.41	1.63 (0.72–3.70)	0.24
Concern that substance use would affect ability to take PrEP	65 (27.0 %)	3.10 (1.61–5.96)	0.001	1.91 (0.87–4.20)	0.11	1.40 (0.60–3.25)	0.43

[a] Adjusted for age, sexual identity, race/ethnicity, education, housing situation, relationship status, income, and health insurance status

[b] Adjusted for substance used, age, sexual identity, race/ethnicity, education, housing situation, relationship status, income, and health insurance status

[c]Questions only asked of those who reported having a main partner (n = 105)