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Predictors of Awareness, Accessibility and Acceptability of Pre-Exposure Prophylaxis (PrEP) among English- and Spanish-speaking Latino men who have sex with men in Los Angeles, California

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Conflict of interest. The authors declare they have 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 (University of California, Los Angeles, Institutional Review Board, IRB#15-001625) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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

Running Head: PrEP Awareness, Accessibility and Acceptability among Latino MSM

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ABSTRACT

BACKGROUND: Uptake of Pre-Exposure Prophylaxis (PrEP) among Latino men who have sex with men (LMSM) remains low. We examined awareness, accessibility, acceptability and use of PrEP among LMSM.

METHODS: LMSM were recruited using social/sexual networking apps. Multiple Logistic regressions identified significant predictors of PrEP awareness, accessibility and acceptability.

RESULTS: Among 276 participants, only 6% reported current PrEP use. Among non-PrEP users, 85% reported PrEP awareness, 71% indicated high likelihood of future PrEP use, but only 35% reported knowledge about accessing PrEP. In multiple logistic regressions, a lower likelihood of PrEP awareness was associated with lower level education, whereas a higher likelihood was associated with reporting 6-10 or over 10 sexual partners. A lower likelihood of PrEP accessibility was associated with lower level education and undocumented status. A lower likelihood of PrEP acceptability was associated with an income of \$15,001 - 30,000, whereas a higher likelihood was associated with lower level education and reporting 6-10 or over 10 sexual partners.

DISCUSSION: PrEP promotion targeting Latino MSM should be expanded for those with lower levels of education and those who are undocumented.

Keywords: Latino, Hispanic, men who have sex with men, pre-exposure prophylaxis, awareness, acceptability, accessibility

INTRODUCTION

In the United States (US), English- and Spanish-speaking Latino men who have sex with men (MSM) experience disproportionately higher rates of HIV diagnoses. The Centers for Disease Control and Prevention (CDC) report that while white MSM have a one in eleven lifetime HIV risk, one in four Latino MSM will contract HIV in their lifetime [1]. In addition, though rates of HIV infections stabilized among MSM overall between 2011 and 2015, HIV infection rates increased by 14% among Latino MSM [2]. In Los Angeles County, home to the second largest HIV/AIDS epidemic in the US, and site for the present study, Latino MSM represented 49% of all new HIV diagnoses among MSM of all racial or ethnic groups and 87% among Latinos in general [3]. To disrupt these troubling patterns, Latino MSM must gain awareness of and access to the latest innovations in HIV prevention.

Pre-Exposure Prophylaxis (PrEP), one such innovation, effectively prevents HIV with daily use of TRUVADA® (emtricitabine and tenofovir disoproxil fumarate), an HIV antiretroviral medication with limited side effects and contraindications [4-7]. PrEP use is recommended by the CDC for sexually active MSM engaging in high risk behavior(s), such as inconsistent or no condom use, sex with multiple partners, partnership with someone who is HIV-positive, non-monogamous relationships, engaging in sex work, using methamphetamines or other sex drugs and/or recent diagnosis with a bacterial sexually transmitted infection [8]. Between September 2015 and August 2016, an estimated 1.1 million people in the US, including an

estimated 220,000 Latino MSM, had at least one of these indications and would have benefitted from using PrEP [9]. However, only 7,600 US Latinos received a PrEP prescription in this time period [9].

Low PrEP use rates among Latino MSM have persisted since the FDA approved PrEP in 2012; explanations for this pattern have evolved over time [10,11]. Initially, limited PrEP uptake among Latino MSM was attributed to limited PrEP awareness and was found to be associated with lower income and education levels [12,13]. While more recent studies demonstrate higher awareness of PrEP, as well as high interest in using PrEP among most Latino MSM, uptake remains low [13-16]. Public health campaigns and media coverage of PrEP (including publicized controversies about the medication) have increased PrEP awareness and will likely continue to increase PrEP acceptability as well [17,18]. However, persistent discrepancies between high PrEP acceptability and low uptake among Latino MSM suggest that PrEP access remains limited [15,19,20].

To our knowledge, this is the first study to assess individual-level demographic and behavioral predictors of awareness, accessibility and acceptability of PrEP among Latino MSM in tandem and to include Spanish-speaking and undocumented participants. In previous studies, insurance status, income and perceived cost have been used to assess potential access to PrEP among racial and ethnic minority MSM [21-23]. Access to PrEP among Latino MSM has not been assessed directly, nor has it been measured within the context of PrEP awareness and acceptability. Understanding how these

factors interact with demographic and behavioral characteristics to affect accessibility and, ultimately, PrEP adoption, could help improve PrEP uptake among this critically impacted sub-population. Our study has the potential to inform interventions promoting PrEP awareness, accessibility, acceptability and use among Latino MSM.

METHODS

We drew our sample of 276 Latino MSM from a larger study identifying and engaging Latino MSM in Los Angeles, California in HIV testing and prevention or medical services using gay-oriented social and sexual networking apps. Participants responded to English, Spanish, or Spanglish (i.e., combined Spanish and English words) study advertisements within the apps. Enrollment required that participants be 18 years or older, self-identified Latino male and report having had sex with a male in the past three years. The study sample for this paper included only participants who answered all PrEP-related questions. The Institutional Review Boards of the Los Angeles County Department of Public Health and the University of California, Los Angeles approved all study materials and procedures. All participants provided informed consent and received a \$30 gift card for their participation.

Data Collection

Between December 2015 and April 2017, participants completed an interviewer-administered survey in either English or Spanish in a private interview setting. Trained, bilingual research staff with demographic

characteristics (e.g., ethnicity, sexual orientation) matching those of the target population administered the survey. Participants reported demographic characteristics. Language was documented according to participants' chosen survey language (i.e., English or Spanish). Substance use and sexual behaviors were recorded for the past 12 months. Any use of methamphetamines, crack, heroin, cocaine, any injection drug and any shared injection equipment were reported as "Yes" or "No". Participants reported total number of sexual partners and whether they had anal sex with a male in any of the following scenarios ("Yes" or "No"): without a condom, with a person who is an injection drug user, with a person who is HIV-positive, under the influence of methamphetamines and/or under the influence of alcohol.

The survey assessed current PrEP use by asking: "Are you currently using PrEP?" To assess PrEP awareness and accessibility, participants responded to the questions: "Have you ever heard of Pre-Exposure Prophylaxis or PrEP for preventing HIV infection?" and "Do you know how to get PrEP?" These three questions on PrEP use, awareness and accessibility had binary "Yes" or "No" response options. To measure PrEP acceptability, participants were asked: "How likely would you be to take PrEP to help prevent you from becoming infected with HIV?" Response options included a five-level scale ranging from "very unlikely" to "very likely." We classified participants as having high PrEP acceptability if they selected "very likely" or

“likely” and as having low PrEP acceptability if they selected “very unlikely,” “unlikely,” or “indifferent.”

Statistical Analyses

Survey responses were analyzed using descriptive, bivariate and multiple logistic regression approaches in SAS software version 9.4 (SAS Institute Inc., Cary NC). Bivariate analyses evaluated associations between the three main outcomes (PrEP awareness, accessibility and acceptability) and participants’ demographic and behavioral characteristics. Some categories measuring education level, birth country and residency/citizenship status were consolidated as they had too few responses (i.e., ≤ 4) for meaningful statistical interpretation. Categorical variables were created for age, income and number of sexual partners after assessing the distribution and frequencies of responses. Variables significant at the bivariate level with a $p < 0.20$ (following recommendations of Hosmer and Lemeshow)[24] were included in three multiple logistic regression models assessing predictors of PrEP awareness, accessibility and acceptability. While the PrEP awareness model included the total sample of non-PrEP users ($n=260$), analyses exploring predictors of PrEP accessibility and acceptability excluded participants who reported having never heard of PrEP ($n=38$). A $p < 0.05$ was considered significant for the regression models.

RESULTS

Table 1 provides demographic, behavioral and PrEP-related characteristics for current PrEP users and non-PrEP users. Of the 276 Latino MSM included in the sample, less than 6% (n=16) reported using PrEP. These participants were generally younger and had more than a high school education. All current PrEP users spoke English, and 81% were born in the US. Among the 260 participants not using PrEP, more than two-thirds were 18 to 35 years old and reported having more than a high school education. Fourteen percent were Spanish speakers (i.e., completed a Spanish language survey), about one-third (29%) were born outside of the US and 10% were undocumented. Use of methamphetamines or cocaine was reported by 12% and 13% of non-PrEP users, respectively. More than 50% of both PrEP and non-PrEP users reported having multiple sex partners, having condomless sex with a male, and having sex with a male while under the influence of alcohol. Heroin use and other injection drug use were reported by none of the PrEP users and by fewer than 3% of non-PrEP users and, therefore, were not included in table 1 or in the logistic regression models.

Predictors of PrEP Awareness

In bivariate analyses, a higher likelihood of PrEP awareness was associated with cocaine use (OR 6.69, 95% CI: 0.89-50.39), having 2-5 sexual partners (OR 3.21, 95% CI: 1.08-9.50), 6-10 sexual partners (OR 6.00, 95% CI: 1.73-20.80), more than 10 sexual partners (OR 8.82, 95% CI: 2.34-33.26), having engaged in condomless anal sex with a male (OR 2.39, 95% CI: 1.16-4.96) and having engaged in anal sex with a male while under the influence

of alcohol (OR 1.82, 95% CI: 0.89-3.71) (Table 2). A lower likelihood of PrEP awareness was associated with having a high school diploma/GED or less (OR 0.04, 95% CI: 0.02-0.34), having an associate/technical degree or some college (OR 0.15, 95% CI: 0.02-1.20), Spanish language (OR 0.37, 95% CI: 0.16-0.85) and undocumented status (OR 0.31, 95% CI: 0.12-0.79). In adjusted multiple logistic regression analyses, Latino MSM with a high school diploma/GED or less were less likely to have ever heard of PrEP compared to those with a bachelor's degree or higher (aOR 0.05, 95% CI: 0.01-0.38) (Table 2). Latino MSM with 6 to 10 sexual partners or over 10 sexual partners were more likely to have ever heard of PrEP compared to those with one or no sexual partners (aOR 5.08, 95% CI: 1.13-22.79; aOR 6.19, 95% CI: 1.26-30.55, respectively).

Predictors of PrEP Accessibility

Participants who reported having had anal sex with a male who is HIV-positive (OR 2.75, 95% CI: 1.18-6.40) and having had anal sex with a male while under the influence of methamphetamines (OR 2.29, 95% CI: 1.02-5.17) were more likely to know how to access PrEP in bivariate analyses (Table 2). Participants having a high school diploma/GED or less (OR 0.40, 95% CI: 0.18-0.86), having an associate/technical degree of some college (OR 0.47, 95% CI: 0.24-0.92) and undocumented status (OR 0.23, 95% CI: 0.05-1.03) were less likely to indicate knowing how to access PrEP. In adjusted multiple logistic regression analyses, Latino MSM with a high school diploma/GED or less and those with an associate/technical degree or some

college were less likely to indicate perceived PrEP accessibility compared to those with a bachelor's degree or higher (aOR 0.35, 95% CI: 0.15-0.81; aOR 0.42, 95% CI: 0.21-0.85, respectively) (Table 2). Undocumented individuals were less likely to report perceived PrEP accessibility than those with US citizenship or other legal status (aOR 0.19, 95% CI: 0.04-0.89).

Predictors of PrEP Acceptability

In bivariate analyses, participants who were 18-25 years of age (OR 2.58, 95% CI: 0.93-7.18), 26-35 years of age (OR 3.18, 95% CI: 1.17-8.64), having a high school diploma/GED or less (OR 3.45, 95% CI: 1.45-8.21), part-time employment (OR 1.79, 95% CI: 0.81-3.99), having 2-5 sexual partners (OR 4.01, 95% CI: 0.97-16.61), 6-10 sexual partners (OR 8.44, 95% CI: 1.91-37.26), more than 10 sexual partners (OR 9.92, 95% CI: 2.23-44.07), anal sex with an HIV-positive male (OR 2.32, 95% CI: 0.76-7.04) and having had anal sex with a male while under the influence of alcohol (OR 1.79, 95% CI: 1.00-3.23) were more likely to indicate high acceptability for PrEP (Table 2). Participants with an annual income of more than \$30,000 (OR 0.48, 95% CI: 0.24-0.99) were less likely to indicate high acceptability for PrEP. In adjusted multiple logistic regression analyses, those with high school education or less were more likely to indicate high PrEP acceptability compared to those with a bachelor's degree or higher (aOR 3.36, 95% CI: 1.24-9.10) (Table 2). Those with 6 to 10 sexual partners or over 10 sexual partners were more likely to have high PrEP acceptability compared to those with one or no sexual partners (aOR 7.90, 95% CI: 1.54-55.69; aOR 10.24, 95% CI: 1.88-55.78,

respectively). Latino MSM with an annual income of \$15,001 to \$30,000 were less likely to report high acceptability for PrEP than those with an annual income of \$15,000 or less (aOR 0.39, 95% CI: 0.17-0.92).

DISCUSSION

Despite the current limited uptake of PrEP among Latino MSM, our findings of relatively high awareness and acceptability of PrEP among Latino MSM suggest potential for increased PrEP adoption in the future. In our sample, less than 6% of participants were current PrEP users, nearly matching the prevalence of PrEP use among Latino MSM reported in other California surveys [19,23,25]. However, this remains well below 27%, the estimated proportion of US Latino MSM with PrEP indications [26]. PrEP uptake data from our survey also align with prior research indicating that younger MSM are more likely to use PrEP [10,25,27]. While this could reflect greater demand for PrEP during life stages with more sexual exploration and risk taking, this could also reflect the efficacy of PrEP marketing and educational campaigns targeting younger men [11,14,28,29]. Additionally, participants who reported greater sexual risk behaviors by way of higher numbers of sexual partners also reported higher PrEP awareness and acceptability, a pattern common to other studies [16,30]. A majority of current PrEP users in this sample had a high school education or higher, which also parallels other research findings of higher educational attainment predicting higher PrEP use [27,31].

Among our sample of Latino MSM not currently taking PrEP, most (85%) indicated awareness of PrEP. This corroborates prior research suggesting that PrEP awareness among Latino MSM has increased over time [31-33]. However, this trend may not include Spanish-speaking Latino MSM. In our bivariate analyses, Spanish-speakers were less likely than English-speaking participants to report awareness of PrEP. The lack of any Spanish-speakers using PrEP in the present study, in conjunction with lower awareness noted in our bivariate analyses, highlight a need for PrEP outreach and navigation services targeting Spanish-speaking Latino MSM.

All interpretations of our findings must consider that PrEP awareness may not equate to a comprehensive understanding of the method of using the medication for prevention (e.g., dosing requirements, ongoing medical monitoring, medication adherence). In prior work, MSM reported misunderstandings of PrEP, such as believing that PrEP is taken immediately before and/or after a sexual encounter and not knowing that PrEP requires a prescription from a physician [34]. High awareness does not invalidate a need for continued and increased PrEP education campaigns, particularly among certain Latino MSM sub-populations.

Our findings also demonstrate limited accessibility to PrEP among a diverse sample of Latino MSM, most of whom reported risk behaviors that would likely make them appropriate candidates for PrEP. Only one-third of study participants reported knowing how to access PrEP, despite living in Los Angeles County, home to a robust PrEP program implemented by the local

Public Health Department [35]. We also found that Latino MSM with the lowest levels of education and those who reported their residency status as undocumented were the least likely to know how to access PrEP. Latino MSM with lower educational attainment may report lower PrEP access due to less engagement with the healthcare system, which may be the result of lower rates of insurance coverage [36]. Undocumented Latino MSM may encounter similar barriers related to insurance status, while also contending with an additional perceived fear of deportation when accessing medical services due to their undocumented status [37]. Limited knowledge about how to access PrEP in this population requires significant attention, particularly for Latino MSM with low levels of education and those who are undocumented.

In the present study, Latino MSM with lower educational attainment were more likely to indicate a higher likelihood of future PrEP use compared to those with a Bachelor's degree or higher. While these results may seem counterintuitive, similar trends related to educational status and PrEP acceptability have been found in prior research [38,39]. Those with higher educational attainment may engage in fewer risky behaviors or with less frequency, which then reduces their perceived need for PrEP. Latino MSM of different educational status could differ in their perceived risk of HIV. Future research should explore the role of education in differences in HIV risk behaviors and perceived HIV risk among Latino MSM.

While PrEP acceptability was relatively high, it is concerning that nearly 30% of our sample reported a low likelihood of ever using PrEP in the future.

Prior research has identified multiple barriers to PrEP acceptability among Latino MSM, many of which can be classified into structural and social barriers [11,15,20,37]. Structural barriers relate to problems affecting the health care system and include factors such as perceived high cost of PrEP, insurance requirements and generally low health care system engagement. Social barriers comprise factors related to negative community perceptions of PrEP users, such as assumptions made about their promiscuity or HIV status [17,40]. Similar to other researchers, we suggest that PrEP navigators or peer educators may help bridge the current gap between high awareness and acceptability and low uptake of PrEP among Latino MSM and recommend that navigators or peer educators be other Latino MSM [11,40-43]. We also suggest that PrEP delivery occur in safe spaces, such as community-based organizations that have earned the trust of Latino MSM.

Interpretation of our findings must consider the limitations of this study. The cross-sectional design limits our ability to demonstrate causality between dependent and independent variables of interest. Recruitment was limited to gay-oriented social and sexual networking apps, so findings may not be generalizable to other Latino MSM who do not use these apps.

Another limitation of the study is wide confidence intervals for some of our point estimates which may be due to our relatively small sample size and corresponding larger standard errors for the present study and may limit the precision of the estimates. In addition, despite extensive recruitment efforts, our response from Spanish-speaking Latino MSM was limited and, therefore,

future research should focus on further examining PrEP-related attitudes and behaviors among monolingual Spanish-speaking Latino MSM whose experience may differ from their English-speaking counterparts.

CONCLUSION

Our findings that Latino MSM reported relatively high PrEP awareness and acceptability reflect promising trends for increasing PrEP uptake through culturally tailored PrEP promotion and interventions targeted to Latino MSM. However, continued intra-population disparities in PrEP awareness, accessibility and acceptability noted in our findings suggest that increases in uptake may continue to occur unevenly in a diverse Latino MSM population. In the absence of interventions to increase PrEP access, especially among undocumented individuals and those with lower educational attainment, such disparities are likely to remain. Our study expands previous knowledge about Latino MSM's PrEP-related attitudes by simultaneously quantifying PrEP awareness, accessibility and acceptability among Latino MSM of all ages, including among Spanish-speakers and undocumented individuals. Improving PrEP accessibility for Latino MSM would help ensure a continuous biomedical HIV prevention pathway from PrEP awareness and acceptability to uptake.

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Table 1. Sociodemographic, Sexual Behavior, Substance Use and PrEP-related Characteristics among English- and Spanish-speaking Latino MSM, n (%)

Characteristic	PrEP users N=16	Non-PrEP users N=260
Age (years)		
18-25	5 (31)	76 (29)
26-35	9 (56)	104 (40)
36-45	1 (6)	56 (22)
46+	1 (6)	24 (9)
Language		
English	16 (100)	224 (86)
Spanish	0 (0)	36 (14)
Highest level of education completed		
High school/GED or less	5 (31)	82 (32)
Associate/technical degree or some college	8 (50)	122 (47)
Bachelor's degree or higher	3 (19)	56 (22)
Employment		
Full-time	7 (44)	119 (46)
Part-time	6 (38)	75 (29)
Not working	3 (19)	66 (25)
Income (US dollars) ¹		
0-15,000	6 (38)	107 (41)
15,001-30,000	6 (38)	80 (31)
More than 30,000	4 (25)	71 (28)
Country of birth ²		
United States	13 (81)	183 (71)
Mexico	2 (13)	52 (20)
Other	1 (6)	24 (9)
Undocumented status ²	2 (13)	25 (10)

Used methamphetamines in the past 12 months	0 (0)	32 (12)
Used cocaine in the past 12 months	1 (6)	35 (13)
Number of sexual partners in the past 12 months ¹		
0-1	0 (0)	17 (7)
2-5	4 (25)	106 (41)
6-10	6 (38)	67 (26)
More than 10	6 (38)	68 (26)
Had anal sex with a male without a condom in the past 12 months ¹	14 (88)	194 (75)
Had anal sex with a male who is an injection drug user in the past 12 months ¹	0 (0)	18 (7)
Had anal sex with a male who is HIV-positive in the past 12 months ¹	8 (50)	27 (10)
Had anal sex with a male while under the influence of methamphetamines in the past 12 months ¹	0 (0)	30 (12)
Had anal sex with a male while under the influence of alcohol in the past 12 months ¹	10 (63)	130 (50)
Ever heard of PrEP (awareness)	NA	222 (85)
Know how to get PrEP ³ (accessibility)	NA	77 (35)
Likely to take PrEP in the future ³ (acceptability)		
High acceptability	NA	157 (71)
Low acceptability	NA	65 (29)

Percentages may not add to 100 due to rounding

¹Missing, n=2; ²Missing, n=1; ³Only asked among those who reported having ever heard of PrEP (n=222)

Table 2. Predictors of PrEP awareness, accessibility and acceptability among English- and Spanish-speaking Latino MSM non-PrEP users

Predictor Variables	PrEP Awareness (N=260)		PrEP Accessibility (N=222) ¹		PrEP Acceptability (N=222) ¹	
	COR (95% CI)	aOR (95% CI)	COR (95% CI)	aOR (95% CI)	COR (95% CI)	aOR (95% CI)
Age (years; referent: 46-65)						
18-25	1.70 (0.46-6.23)		0.54 (0.19-1.54)		2.58 (0.93-7.18) †	1.28 (0.38-4.35)
26-35	1.53 (0.45-5.25)		1.10 (0.41-2.96)		3.18 (1.17-8.64) *	2.54 (0.80-8.15)
36-45	0.60 (0.18-2.06)		0.60 (0.20-1.83)		2.00 (0.68-5.92)	1.56 (0.45-5.40)
Spanish language	0.37 (0.16-0.85) ²	1.07 (0.33-3.47)	0.82 (0.34-1.98)		1.14 (0.46-2.86)	
Education (Referent: Bachelor's degree or higher)						
High school/GED or less	0.04 (0.02-0.34) ²	0.05 (0.01-0.38) ²	0.40 (0.18-0.86) ²	0.35 (0.15-0.81) ³	3.45 (1.45-8.21) ²	3.36 (1.24-9.10) ³
Associate/technical degree or some college	0.15 (0.02-1.20) ²	0.16 (0.02-1.33)	0.47 (0.24-0.92) ²	0.42 (0.21-0.85) ³	1.73 (0.88-3.40)	1.93 (0.89-4.23)
Employment (Referent: Not working)						
Part-time	1.47 (0.57-3.80)		1.10 (0.52-2.35)		1.79 (0.81-3.99) ²	1.89 (0.76-4.70)

Full-time	1.12 (0.50-2.55)		1.14 (0.57-2.28)		1.19 (0.59-2.40)	2.01 (0.81-4.97)
Income (Referent: \$0-15,000)						
\$15,001-30,000	1.14 (0.48-2.69)		0.70 (0.35-1.38)		0.65 (0.32-1.30) ²	0.39 (0.17-0.92) ³
More than \$30,000	0.73 (0.32-1.64)		1.42 (0.72-2.79)		0.48 (0.24-0.99) ²	0.39 (0.14-1.10)
Country of birth (Referent: United States)						
Mexico	0.76 (0.33-1.74)		0.83 (0.41-1.70)		0.70 (0.34-1.43)	
Other	0.79 (0.25-2.51)		0.58 (0.20-1.66)		0.87 (0.32-2.42)	
Undocumented status	0.31 (0.12-0.79) ²	0.41 (0.12-1.41)	0.23 (0.05-1.03) ²	0.19 (0.04-0.89) ³	1.39 (0.44-4.42)	
Used methamphetamine in past 12 months	1.75 (0.51-6.07)		1.64 (0.74-3.61)		1.69 (0.65-4.36)	
Used cocaine in past 12 months	6.69 (0.89-50.39) ²	8.08 (0.96-68.31)	0.88 (0.41-1.93)		0.99 (0.45-2.21)	
Number of sexual partners (Referent: 0-1)						
2-5	3.21 (1.08-9.50) ²	2.30 (0.60-8.76)	1.29 (0.31-5.35)		4.01 (0.97-16.61) ²	3.40 (0.68-16.99)

6-10	6.00 (1.73-20.80) ²	5.08 (1.13-22.79) ³	0.85 (0.20-3.69)		8.44 (1.91-37.26) ²	7.90 (1.54-55.69) ³
More than 10	8.82 (2.34-33.26) ²	6.19 (1.26-30.55) ³	1.64 (0.39-6.94)		9.92 (2.23-44.07) ²	10.24 (1.88-55.78) ³
Had anal sex with a male without a condom	2.39 (1.16-4.96) ²	1.87 (0.80-4.35)	1.25 (0.63-2.47)		1.11 (0.55-2.21)	
Had anal sex with a male who is an IDU	3.00 (0.34-23.21)		1.04 (0.37-2.94)		1.99 (0.55-7.18)	
Had anal sex with a male who is HIV-positive	2.23 (0.51-9.85)		2.75 (1.18-6.40) ²	2.35 (0.94-5.89)	2.32 (0.76-7.04) ²	1.52 (0.43-5.33)
Had anal sex with a male under the influence of methamphetamines	1.58 (0.45-5.49)		2.29 (1.02-5.17) ²	2.38 (0.95-5.96)	1.49 (0.57-3.89)	
Had anal sex with a male under the influence of alcohol	1.82 (0.89-3.71) ²	1.05 (0.46-2.38)	1.09 (0.63-1.91)		1.79 (1.00-3.23) ²	1.66 (0.84-3.28)

COR crude odds ratio, aOR adjusted odds ratio

¹For outcome variables PrEP accessibility and PrEP acceptability, only participants who reported having heard of PrEP at the time of the survey (n=222/260) were included in the analyses

²Variables in the bivariate analyses with a $p < 0.20$ were included in the multiple logistic regression analyses

³Variables in the multiple logistic regression analyses with a $p < 0.05$ were considered significant

