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EXPLORING GENDER DIFFERENCES IN PREP INTEREST AMONG INDIVIDUALS TESTING HIV NEGATIVE IN AN URBAN EMERGENCY DEPARTMENT

Jessica Ridgway, MD, MS^{1,2,*}, Ellen Almirol, MPH, MA^{1,2,*}, Jessica Schmitt, LCSW^{1,2}, Alvie Bender, MSW^{1,2}, Grace Anderson², Ivan Leroux, BS², Moira McNulty, MD^{1,2}, and John Schneider, MD, MPH^{1,2,3}

¹Department of Medicine, University of Chicago, Chicago, IL, USA

²Chicago Center for HIV Elimination, University of Chicago, Chicago, IL, USA

³Department of Public Health Sciences, University of Chicago, Chicago, IL, USA

Abstract

PrEP is greater than 90% effective at preventing HIV infection, but many people who are vulnerable to HIV choose not to take PrEP. Among women, men who have sex with women (MSW) and men who have sex with men (MSM) who tested HIV negative in our emergency department, we assessed behavioral risk factors, self-perception of HIV risk, and interest in PrEP linkage. Women had lower odds of perceiving any HIV risk versus no risk compared to MSM (uOR=0.39, 95% CI 0.18–0.87), while Whites had greater odds of perceiving themselves as high risk compared to Blacks (aOR=0.35, 95% CI 0.13–0.99). Age and self-perception of risk were not associated with PrEP interest, but patients who were objectively classified as “at risk” had greater odds of interest in PrEP than those not at risk ($p<0.01$). Discordance between HIV risk self-perception and objective risk demonstrates the limitation of relying on patient self-referral for PrEP based on their own subjective risk perception.

Keywords

HIV prevention; pre-exposure prophylaxis; HIV risk perception; Emergency Department

Pre-exposure prophylaxis (PrEP) is greater than 90% effective at preventing HIV infection among individuals at increased risk for HIV (Grant et al., 2010). Uptake of PrEP, however, has been low (Eaton, Driffin, Bauermeister, Smith, & Conway-Washington, 2015; Grant et al., 2014), and many people who are vulnerable to HIV choose not to take PrEP (Cohen et al., 2015). This gap in PrEP uptake can be partially explained by discordance between risk behavior and self-perception of HIV risk, i.e. an individual may engage in HIV risk behaviors but perceive themselves to be low or no risk for HIV (Khawcharoenporn,

Corresponding Author: Jessica Ridgway, MD, MS, University of Chicago Medicine, 5841 South Maryland Avenue MC 5065, Chicago, IL 60637, Tel: (773) 702-9185 Fax: (773) 702-8998, jessica.ridgway@uchospitals.edu.

*These authors contributed equally to the work.

Kendrick, & Smith, 2012). Indeed, low self-perceived risk of HIV is associated with limited interest in PrEP (Khawcharoenporn et al., 2012).

Much of the prior literature examining the relationship between HIV risk, subjective risk-perception, and PrEP interest is among men who have sex with men (MSM) (Cohen et al., 2015; Golub, Gamarel, Rendina, Surace, & Lelutiu-Weinberger, 2013). There is a relative paucity of data regarding HIV risk perception and PrEP interest among women compared to men, regardless of sexual orientation (Amaro, Raj, & Reed, 2001; Garfinkel, Alexander, McDonald-Mosley, Willie, & Decker, 2017; Kalichman, Hunter, & Kelley, 1992; Rubtsova, M Wingood, Dunkle, Camp, & J DiClemente, 2013). Furthermore, although 20% of new HIV infections are among women, uptake of PrEP among women has lagged behind that of men (Bush et al., 2016). Women who have sex with men may not be aware of their own risk factors for HIV infection, i.e. their sexual partner's HIV serostatus or behaviors such as sex with other men or drug use. In one study among cis-women, Garfinkel et al. found that worry about HIV risk was associated with less than a college education, being single, inconsistent condom use, and exchange sex; however, this worry was not associated with PrEP acceptability (Garfinkel et al., 2017). They also found that worry about HIV risk among women was not associated with PrEP acceptability.

Identifying not only the structural and behavioral factors that increase vulnerability in women but also understanding their own self-perception of HIV risk may assist in the rollout of biomedical prevention in this subpopulation. Since women utilize health care services more than men (Bertakis, Azari, Helms, Callahan, & Robbins, 2000), accessing women in a healthcare setting makes it more probable for intervening for HIV prevention. The Emergency Department (ED), for example, has become an important setting for routine HIV testing because ED patients are often disproportionately affected by HIV and may have limited access to primary care (Kuo, Haukoos, Witt, Babaie, & Lewis, 2005). Since EDs uncover thousands of new HIV diagnoses, the ED is a promising setting to engage with patients at each stage of the HIV care continuum (Haukoos et al., 2010). EDs, however, often offer little in regards to HIV prevention services for those who test negative for HIV in the ED. Many of these HIV-negative individuals remain at substantial risk for future HIV infection and could benefit from HIV prevention counseling and PrEP (Pringle, Merchant, & Clark, 2013).

To better understand the differences in PrEP uptake among men and women, we interviewed patients who tested negative for HIV in our urban ED to assess behavioral risk factors, self-perception of HIV risk, and interest in PrEP care. We then examined these gender differences in HIV self-perception and an objective assessment of HIV risk among women, men who have sex with women (MSW), and MSM.

Methods

Patients 18 years of age or older who tested negative for HIV in the University of Chicago Emergency Department (ED) were eligible to be included in the study. The ED was chosen as the setting for this study because patients who access care in urban EDs are often at disproportionate risk for HIV infection (Goggin, Davidson, Cantril, O'Keefe, & Douglas,

2000). We excluded patients with encounter billing codes consistent with acute psychiatric illness, miscarriage, or sexual assault, as well as patients who were subsequently hospitalized following their ED visit or noted to be pregnant.

During their ED visit, patients were interviewed by trained HIV prevention counselors, regarding behavioral risk factors, self-perception of HIV risk, HIV prevention practices, and interest in being linked to PrEP care. If the HIV prevention counselor was not able to speak with the patient in person during their ED visit, then they were contacted by telephone after discharge from the ED. From July 2015 onward, HIV prevention counseling and risk assessment was performed as part of routine care for patients undergoing HIV testing in the ED.

We retrospectively collected demographic data (i.e. age, gender, race), chief complaint recorded in the electronic medical record (EMR), and ICD9/ICD10 billing codes for the ED encounter for patients who underwent HIV prevention counseling and who tested negative for HIV in the ED between July 2015 and August 2017. Gender was a dichotomous variable with responses 1 “Female” versus 0 “Male” for biological sex. Age was adapted as a categorical variable. To determine if patients visited the ED for sexual health concerns, we classified chief complaints and ICD9/10 codes as related to STI and/or genital complaints. For chief complaints, examples of STI-related complaints included: “STD Check Male/Female”, “Penile Discharge”, “Vaginal Complaint”, “Rectal Problem” and “Rectal Bleeding”. These data, HIV prevention counseling data, and other EMR data were de-identified prior to access and analysis in this study. This study was reviewed by the University of Chicago Institutional Review Board and determined to be exempt from further IRB review.

We categorized patients by biological sex and gender of sexual partner. All female patients, regardless of the gender of their sexual partners, were categorized into the “Women” group. Patients who were biological men were split based on their sexual partners, i.e. if men indicated their sexual partners were women exclusively, they were classified as “MSW”, while men who reported their sexual partners as either women and men or men only were categorized as “MSM”.

Knowledge regarding transmission of HIV and behavioral risk were assessed in the HIV prevention counseling session. Knowledge of HIV transmission was assessed with an open-ended question, asking how HIV is transmitted. Responses were recorded: 1 “Through sexual intercourse”, 2 “Through blood contact”, 3 “Breast milk/mother to infant contact”, 4 “Other”, or 5 “No Response”. Additionally, patients were asked about behaviors including sex with or without a condom with men, women, and/or an HIV-positive person in the past 6 months; number of sexual partners in the past 30 days; bacterial STI in the past 12 months; and injection drug use (IDU) history.

According to the Center for Disease Control (CDC), markers of “substantial risk of acquiring HIV infection” for heterosexual women include: sex with an HIV-positive partner, history of inconsistent or no condom use, commercial sex work, high number of sexual partners, recent bacterial STI, and living in a high-prevalence area or network (Control &

CDC, 2017). The CDC PrEP guidelines list the following indications for PrEP in HIV-negative heterosexual women: not in a monogamous partnership, had sex in the past 6 months, and at least one of the following: infrequent use of condoms with one or more partners of unknown HIV status who is at substantial risk for HIV, have a sex partner who has sex with both women and men, a partner who is known HIV positive, syphilis or gonorrhea diagnosed in the past 6 months (Control & CDC, 2017).

Based on the patients' self-report, patients were classified as "at risk" for HIV if they met one or more of the following criteria: 1) man who reported condomless sex with another man in the past 6 months, 2) man or woman who reported sex with a HIV positive partner in the prior 6 months, 3) man or woman who reported sex with more than one partner in the past 30 days, regardless of partner's gender, 4) bacterial STI in the past 12 months, or 5) injection drug use with needle sharing in the past 6 months. Patients determined as "at risk" were also asked about any alternative risk reduction methods they use or plan on using, such as condom use, reducing sexual partners, partner testing, or PrEP for HIV prevention. These criteria were adapted from the CDC's markers of substantial risk of acquiring HIV infection in the 2017 PrEP guidelines (Control & CDC, 2017).

Self-perception of HIV risk was assessed by asking "What do you think are the chances that you might get infected with HIV in the future?" and was treated as an ordinal categorical variable as 4 "High", 3 "Medium", 2 "Low", and 1 "None" (Napper, Fisher, & Reynolds, 2012). Additional analysis was conducted to compare demographics between responders and non-responders and these groups were found to be comparable. Thus, patients who did not respond to this question were excluded from the analyses (data available upon request). After completing the HIV prevention counseling session, patients were then asked if they would be interested in learning more about PrEP and/or a referral for PrEP care. Patients who were interested in PrEP were provided a referral to a trained PrEP navigator.

To compare patient demographics and behavioural characteristics, we used Kruskal-Wallis test for continuous variables and chi-square tests for categorical variables. Proportional ordinal logistic regression was used to calculate the odds ratio (OR) between self-perception of HIV risk and "at risk", adjusting for patient demographics. The relationship of covariates to the binary outcome, PrEP interest, was assessed by using logistic regression. P-values 0.05 and ORs for which the 95% confidence interval (CI) did not include 1.0 were considered statistically significant. All statistical analyses were conducted in R 2.14.0.

Results

Of the 5,317 patients with a negative HIV test from July 2015 to August 2017, 2324 (44%) were contacted and 702 (13%) completed the HIV prevention counseling session. Table 1 provides a summary of sample characteristics of patients. Among the patients (mean age 27.7 ± 8.6 years old), 90.5% were African-American and 72.2% were women. Approximately a third of patients had an STI-related ICD9 and/or ICD10 code, as well as reported chief complaints related to STI symptoms. The proportion of STI-related diagnoses were notably different ($p < 0.01$) among groups, with MSW with the greater percentage of ICD9-ICD10 codes related to STIs (47.9%) and MSM with the higher percentage of STI-

related chief complaints (50.0%). Women were the least represented in both STI billing codes and chief complaints.

With regards to knowledge of HIV transmission, 87.3% of patients understood that HIV transmission occurs through sexual intercourse, 55.6% through blood contact, 3.1% through breast milk/mother-to-infant contact, and the remaining 14.2% either stated other or no response. When comparing any knowledge of HIV transmission versus no knowledge, there was no difference among gender groups ($p=0.52$, data not shown). The average number of sexual partners in the past 30 days was one (1.0 ± 0.7), which was similar across all gender groups ($p=0.89$).

We observed differences in subjective risk perception among gender groups ($p=0.03$). Women were the least likely to consider themselves at high or medium risk for HIV (2.8%) compared to MSW (5.9%) and MSM (7.6%). Approximately 96% of patients perceived themselves to be at no or low risk for HIV, despite more than a third of the individuals being identified as “at risk” for HIV infection ($p<0.01$).

Among the patient cohort, almost half of MSW (49.1%), 46.2% MSM and 32.7% women were identified as “at risk”. Patients considered “at risk” perceived themselves to be at medium (4.6%) or high (1.5%) risk for HIV infection, which was only slightly greater than those from the total study sample who perceived themselves to be at medium or high HIV risk ($p<0.01$). When comparing those at risk for HIV among gender groups, MSW were the most likely to perceive themselves to be of high or medium risk (9.6%) followed by women (4.8%) and MSM (0.0%). No differences in self-perception of HIV risk among those “at risk” were observed between gender groups ($p=0.37$). A larger proportion of patients “at risk” were interested in learning more about PrEP (54.4%) than the those who were not at risk (31.5 %) ($p<0.01$). Among patients who were at risk, there was no significant difference between groups in terms of interest in PrEP ($p=0.86$).

Results from the multiple ordinal logistic regression are shown in Table 2a. The odds of self-perceived “high”, “medium” or “low” risk for HIV compared to self-perceived “no risk” were 61% lower among women compared to MSM (uOR=0.39, 95% CI 0.18–0.87). However, when adjusted for age and race, this relationship between risk groups and perception of HIV risk was no longer significant. We also found that the odds of perceiving “high risk” versus “medium”, “low” or “no” risk combined were 2.9 times greater for Whites compared to Blacks, even after adjusting for sex and age of the patients (aOR=0.35, 95% CI 0.13–0.99). Although not significant, a trend of older age was associated with a decrease in perception of HIV risk across age groups.

Table 3 displays the relationship between covariates and PrEP interest. Almost half (47.3%) of patients were interested in learning more about PrEP, regardless of gender group or self-perception of risk. Sixty percent (15/25) of MSM were interested in PrEP, compared to 47.2% (75/159) of MSW and 46.6% (225/483) of women. However, the differences in PrEP interest among gender groups were not significant. Age and self-perception of risk were not associated with interest in PrEP, but patients who were objectively at risk had 1.8 greater odds of being interested in PrEP than those not at risk ($p<0.01$).

Among patients at risk for HIV infection who were not amenable to PrEP linkage, 38.3% reported use of condoms for HIV prevention. Aside from condom use, MSM were more likely to report use of partner testing for HIV prevention (25.0%), whereas women (13.2%) and MSW (13.4%) were more likely to report monogamy as a method for HIV prevention.

Discussion

Current targeted HIV prevention strategies focus primarily on MSM communities where HIV incidence is highest; yet women, particularly African American women in the U.S., also account for a substantial percentage of new HIV infections (Stein, 2016). Consistent with this public health messaging, we found that women were less likely to perceive themselves to be at risk for HIV than MSM or even heterosexual men. However, a substantial proportion of the women included in this study met objective criteria for being at risk for HIV infection and were interested in PrEP referral.

Calabrese et al. found that current CDC PrEP indication for heterosexual women may be too restrictive, potentially excluding women who are at risk for HIV who may benefit from PrEP (Calabrese et al., 2018). We similarly found that many of the women in our study did not necessarily meet the CDC indications for PrEP but were classified as objectively “at risk” and were interested in PrEP. Existing CDC PrEP indications exclude many women who may not know or be aware of their partners’ risk factors and thus, inaccurately perceive themselves to be at low to no risk. Prior studies show that CDC PrEP indications do not necessarily predict HIV risk behaviors or HIV seroconversion (Control & CDC, 2017). Unfortunately, no alternative guidelines or verbiage about risk for women outside of the CDC PrEP guidelines are available.

In the United States, there are few prior studies examining the relationship between HIV risk perception and PrEP uptake (Adefuye, Abiona, Balogun, & Lukobo-Durrell, 2009; Arnold et al., 2012; Liu et al., 2014), particularly among women. More than one third of patients in this study were at substantial risk for HIV infection and potential candidates for PrEP based on our objective criteria. However, of these “at risk” patients, only 6.1% perceived themselves to be at medium or high risk. Among MSM who were classified as “at risk”, zero patients perceived themselves to be high or medium risk and more than half of the patients considered themselves to be at no risk at all. We hypothesized that patients who were objectively “at risk” would be more likely to perceive themselves to be at medium or high HIV risk than those who were not classified as “at risk”; however, this was not reflected in our data (aOR=1.41, 95% CI 0.99–2.00). Others have similarly found discordance between objective HIV risk and subjective risk perception. In a study of women who seroconverted in sub-Saharan Africa, 52% reported they perceived no risk for HIV infection, demonstrating an underestimate of perceived HIV risk in women (Corneli et al., 2014). This discordance between subjective risk perception of HIV and objective risk assessment demonstrates the limitation of relying on patient self-referral for PrEP based on their own subjective risk perception (Cohen et al., 2015; Khawcharoenporn et al., 2012). However, interestingly, many patients who were at objective risk for HIV were interested in PrEP referral, even if they did not perceive themselves to be at risk for HIV. Indeed, patients who were classified as “at risk” had greater odds of being interested in PrEP than those at low risk.

Despite higher rates of HIV infection among African Americans in the United States ((Beer, Oster, Mattson, & Skarbinski, 2014; Millett, Malebranche, Mason, & Spikes, 2005), we found that Black patients perceived their HIV risk to be lower compared to White patients (aOR=0.35, 95% CI 0.13–0.99), independent of age and gender. More research is needed to understand the relationship between HIV risk perception and risk behaviors in the Black community (Bazargan, Kelly, Stein, Husaini, & Bazargan, 2000; Sutton et al., 2011). One major limitation in our study is the low response rate from the ED patient population who tested negative for HIV, given that only 13% were successfully contacted. HIV prevention counselors attempted to meet with patients during their visit, but were often unable to make contact with patients due to scheduling availability. Attempts to reach patients by telephone were also made, but many patients had non-working phone numbers at the time of contacting them post-ED visit, making telephonically a difficult medium for outreach. Because of the low response rate, we observed a potential overestimate of “at risk” women (63.6%), whereas 31.8% were MSW and 4.6% were MSM. This may be due to higher percentage of women who seek care in the ED (Bertakis et al., 2000), as well as higher response rates among women than MSW and MSM.

Conclusion

Our study is unique in that we assessed HIV risk perception and PrEP interest among both women and men in an urban ED. More research is needed to understand the most effective strategies for PrEP education in these different demographic groups. We found that a considerable proportion of the patients who tested negative for HIV, many of them women, were at risk for future HIV infection and interested in learning more about PrEP. This suggests that targeted PrEP outreach among patients testing HIV negative in the ED may be a promising strategy for HIV prevention, among both women and men.

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Table 1.

Patient Demographics and Responses, by sexual behavior group (n=702)

	Total n (%)		Women n (%)		MSW n (%)		MSM n (%)		p-value
	702	100.0	507	72.2	169	24.1	26	3.7	
EMR Variables									
Age (median, IQR)	27.7	(8.6)	27.3	(8.0)	29.1	(10.3)	24.5	(4.2)	0.10
Race									
Black	635	90.5	467	92.1	149	88.2	19	73.1	0.08
White	13	1.9	7	1.4	4	2.4	2	7.7	
Other	4	0.6	2	0.4	2	1.2	0	0.0	
Declined/Unknown	50	7.1		6.1	14	8.3	5	19.2	
STI Related Diagnosis						31			
ICD9-ICD10 Codes	234	33.3	142	28.0	81	47.9	11	42.3	<0.01**
Chief Complaints	236	33.6	139	27.4	71	42.0	13	50.0	<0.01**
Patient Responses									
HIV Education									
Through sex	613	87.3	437	86.2	153	90.5	23	88.5	0.34
Blood contact	390	55.6	287	56.6	86	50.9	17	65.4	0.26
Breast Milk/MTC	22	3.1	15	3.0	4	2.4	3	11.5	0.04*
Other	62	8.8	51	10.1	10	5.9	1	3.8	0.17
None	38	5.4		5.5	7	4.1	3	11.5	0.29
Sexual Behavior-Risk (in the past 6 months)									
With condom									
Sex with men	461	65.7	438	86.4	0	0.0	23	88.5	0.89
Sex with women	198	28.2	30	5.9	161	95.3	7	16.9	
Sex with HIV+	8	1.1	3	0.6	1	0.6	4	15.4	
No sex in the 6 months	30	4.3	26	5.1	4	8.3	0	0.0	
Without condom									
Sex with men	390	55.6	381	75.1	0	0.0	9	34.6	0.89
Sex with women	154	21.9	12	2.4	137	81.1	5	19.2	
Sex with HIV+	3	0.4	1	0.2	0	0.0	2	7.7	
No sex in the 6 months	17	2.4	14	2.8	3	1.8	0	0.0	
No. of sex partners (mean, SD)	1.0	(0.7)	0.99	(0.5)	1.3	(1.1)	1.1	(1.1)	
Self-Perception of HIV risk						0.99	(0.5)		
None	501	71.4	379	74.8	108	63.9	14	53.8	0.03*
Low	175	24.9	114	22.5	51	30.2	10	35.8	
Medium	18	2.6	10	2.0	7	4.1	1	3.8	
High	8	1.1	4	0.8	3	1.8	1	3.8	
Patients "At risk"	261	37.2		32.7	83	49.1	12	46.2	<0.01**
Self-perception by patients "at risk" ^a						166			

	Total n (%)		Women n (%)		MSW n (%)		MSM n (%)		p-value
	702	100.0	507	72.2	169	24.1	26	3.7	
None	177	67.8	120	72.3	50	60.2	7	58.3	0.37
Low	68	26.1	38	22.9	25	30.1	5	41.7	
Medium	12	4.6	6	3.6	6	7.2	0	0.0	
High	4	1.5	2	1.2	2	2.4	0	0.0	
PrEP Interest ^a	142	54.4	93	56.0	42	50.6	7	58.3	0.86

Note: Kruskal-Wallis tests were used for continuous variables and χ^2 test was used for categorical variables.

*
p < 0.05

**
p < 0.01

IQR: Interquartile range; SD: Standard Deviation

^aDenominator of those patients “at risk” (n=261)

Table 2.
Ordinal Logistic Regression on self-perception of risk, by patient demographics and sexual behavior type (n=702)

	Self-Perception of HIV Risk					Unadjusted uOR 95% CI	Adjusted aOR 95% CI
	Total 702	None 501(%)	Low 175 (%)	Med 18 (%)	High 8 (%)		
Risk Groups							
Men - MSM	26	14 (53.8)	10 (38.5)	1 (3.8)	1 (3.8)	Ref	Ref
Men - MSW	170	108 (63.5)	51 (30.1)	7 (4.1)	3 (1.8)	0.66 [0.30-1.52]	0.89 [0.36-2.31]
Women	509	379 (74.5)	114 (22.4)	10 (2)	4 (0.8)	0.39[0.18-0.87] [*]	0.54 [0.23-1.34]
Age Categories(Years)							
18-24	311	220 (70.7)	78 (25.1)	9 (2.9)	3 (1)	Ref	Ref
25-30	220	152 (69.1)	58 (26.4)	5 (2.3)	4 (1.8)	1.08 [0.74-1.57]	1.04 [0.70-1.54]
31-40	114	85 (74.6)	25 (21.9)	3 (2.6)	1 (0.9)	0.84 [0.51-1.35]	0.85 [0.50-1.40]
41-50	37	26 (70.3)	11 (29.7)	0 (0)	0 (0)	0.98 [0.45-1.99]	0.94 [0.43-1.92]
51-60	17	14 (82.4)	2 (11.8)	1 (5.9)	0 (0)	0.55 [0.12-1.73]	0.47 [0.07-1.77]
61+	5	4 (80)	1 (20)	0 (0)	0 (0)	0.59 [0.03-3.97]	0.47 [0.02-3.29]
Race							
White	13	5 (38.5)	8 (61.5)	0 (0)	0 (0)	Ref	Ref
Black	638	458 (71.8)	153 (24)	16 (2.5)	8 (1.3)	0.32 [0.12-0.88] [*]	0.35 [0.13-0.99] [*]
More than one	4	2 (50)	2 (50)	0 (0)	0 (0)	0.69 [0.07-5.59]	0.68 [0.07-5.53]
Unknown	50	36 (72)	12 (24)	2 (4)	0 (0)	2.67 [0.07-104.1]	1.88 [0.05-74.3]
"At risk"							
Yes	262	177 (67.6)	68 (26)	12 (4.6)	4 (1.5)	Ref	Ref
No	443	324 (73.1)	107 (24.2)	6 (1.4)	4 (0.9)	1.37 [0.98-1.91]	1.41 [0.99-2.00]
PrEPInterest[†]							
Yes	142	95 (66)	39 (27.1)	5 (3.5)	3 (2.1)	Ref	Ref
No	109	73 (66.4)	28 (25.5)	7 (6.4)	1 (0.9)	1.34 [0.96-1.88]	1.40 [0.99-1.98]

[†]Limited to those who are classified as "At risk"

^{*}p < 0.05

Table 3.

Binary Logistic Regression: Association of covariates to PrEP Interest (n=667)

	PrEP Interest (n=315)		No PrEP Interest (n=352)		OR [95% CI]	p-value
	n (%)	n (%)	n (%)	n (%)		
Risk Groups						
MSM	15 (4.8)		10 (2.8)		Ref	
MSW	75 (23.8)		258 (73.3)		0.58 [0.25-1.31]	0.20
Women	225 (71.4)		84 (23.9)		0.60 [0.25-1.39]	0.24
Age Categories						
18-24 years old	139 (44.1)		160 (45.5)		Ref	
25-30 years old	96 (30.5)		113 (32.1)		1.00 [0.70-1.44]	0.98
31-40 years old	55 (17.5)		58 (16.5)		1.07 [0.69-1.66]	0.75
41-50 years old	22 (7)		13 (3.7)		1.95 [0.96-4.12]	0.07
51-60 years old	5 (1.6)		12 (3.4)		0.52 [0.16-1.48]	0.24
61+	2 (0.6)		4 (1.1)		0.77 [0.10-4.70]	0.78
Self-Perception						
None	216 (68.6)		268 (76.1)		Ref	
Low	89 (28.3)		79 (22.4)		1.38 [0.97-1.96]	0.08
Medium	9 (2.9)		10 (2.8)		0.98 [0.37-2.52]	0.96
High	5 (1.6)		3 (0.9)		2.03 [0.49-10.0]	0.34
“At risk”						
No (n=441)	173 (54.9)		243 (69.0)		Ref	
Yes (n=261)	142 (45.1)		109 (31.0)		1.83 [1.33-2.52]	<0.01**

OR = Odds Ratio; CI = Confidence Interval**

* p < 0.05

** p < 0.01