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Stigma and Conspiracy Beliefs Related to Pre-exposure Prophylaxis (PrEP) and Interest in Using PrEP Among Black and White Men and Transgender Women Who Have Sex with Men

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Abstract

The HIV/AIDS epidemic in the US continues to persist, in particular, among race, sexual orientation, and gender minority populations. Pre-exposure prophylaxis (PrEP), or using antiretroviral medications for HIV prevention, is an effective option, but uptake of PrEP has been slow. Sociocultural barriers to using PrEP have been largely underemphasized, yet have the potential to stall uptake and, therefore, warrant further understanding. In order to assess the relationships between potential barriers to PrEP (i.e., PrEP stigma and conspiracy beliefs), and interest in PrEP, Black men and transgender women who have sex with men (BMTW, $N = 85$) and White MTW (WMTW, $N = 179$) were surveyed at a gay pride event in 2015 in a large southeastern US city. Bivariate and multivariate logistic regression analyses were completed to examine factors associated with PrEP interest. Among the full sample, moderate levels of PrEP awareness (63%) and low levels of use (9%) were observed. Believing that PrEP is for people who are promiscuous (stigma belief) was strongly associated with lack of interest in using PrEP, and individuals who endorsed this belief were more likely to report sexual risk taking behavior. Conspiracy beliefs related to PrEP were reported among a large minority of the sample (42%) and were more frequently reported among BMTW than WMTW. Given the strong emphasis on the use of biomedical strategies for HIV prevention, addressing sociocultural barriers to PrEP access is urgently needed and failure to do so will weaken the potential benefits of biomedical prevention.

Keywords

PrEP; HIV prevention; Stigma beliefs; Conspiracy beliefs

Introduction

The current US HIV epidemic calls for urgent attention in addressing rates of HIV transmission among men and transgender women who have sex with men (MTW) [1]. Of great concern, are the race-related disparities in HIV transmission, in particular, the exceedingly high rates of HIV infection among Black/African-American MTW (BMTW)

compared with White MTW (WMTW). For example, although HIV prevalence is elevated among MTW compared to the general population, rates of new HIV infections among BMTW are 6.0 times higher than rates among WMTW [2]. It is estimated that 61% of BMTW could be living with HIV by the time they reach age 40 [3].

Pre-exposure prophylaxis (PrEP), or the use of antiretrovirals such as Truvada[®], to prevent HIV transmission among HIV negative persons at-risk for HIV is a highly effective option for HIV prevention [4, 5]. Although PrEP for HIV prevention was approved by the US FDA in 2012, uptake of PrEP among individuals in-need has been limited [6–8]. In order for PrEP to have a population-level impact on incident HIV infections, scale-up efforts must be prioritized and barriers to implementation need to be addressed.

Broader implementation of PrEP for MTW could potentially result in a substantial decrease in incident HIV infections [9]. Multiple factors, however, have impeded access to and interest in taking PrEP among MTW. Main barriers to use include a lack of wide-spread messaging to promote PrEP in communities of elevated HIV prevalence, costs associated concerns among individuals with no/limited insurance, lack of prescribing providers [10], concerns regarding side-effects and long-term use, and sociocultural barriers to use [11], such as experiences of stigma [12, 13] and other negative beliefs about its use [14].

There is increasing concern for the latter barrier, i.e., sociocultural barriers to PrEP interest and use. Popular press reports regarding PrEP have described individuals using PrEP as “Truvada Whores”—a disparaging term that associates promiscuity with use of PrEP [13, 15]. These commentaries have generated considerable discussion on social media [16], yet little empirical research has assessed what influence these sociocultural barriers have had on individuals’ interest in PrEP. These potential barriers to PrEP interest and use are not well-understood as this topic is a novel area of research focus. In implementation research, understanding how communities respond to prevention strategies, either by adopting or rejecting them, is critical, but we have very limited information on this topic with respect to PrEP.

Based on what is known from informal reports and empirical research on how PrEP has been embraced by communities, stigma related to PrEP uptake appears to be an important sociocultural barrier to PrEP interest [13]. Briefly, stigma is a social construction where social devaluation occurs through a process of labeling, stereotyping, separation, status loss, and discrimination [17]. This process serves as a way to maintain social power structures by subordinating those whose possess devalued characteristics and elevating those who do not. In the case of PrEP, the emergence of negative stereotyping—an important component of stigma—towards individuals who use PrEP deserves further attention and understanding [18].

It is known that the negative labeling of groups (in this case those who use PrEP) can dissuade interest in being part of such group. For example, simply using PrEP implies concern for risk of HIV transmission, which, in turn, may imply engagement in sexual risk taking behavior. Engagement in sexual risk taking has a long-standing history of violating perceived social mores. Further, *stigma by association* is also known to occur when an

individual experiences stigma as a result of being connected to a stigmatized person or group [17]. Negative interpersonal associations have the potential to affect how individuals are perceived. In the case of PrEP, individuals may be concerned about using an antiretroviral for HIV prevention if they associate PrEP use with persons living with HIV—a highly stigmatized group. These societal processes have stymied HIV prevention and treatment efforts since the beginning of the epidemic [18, 19] and has the potential to inhibit PrEP implementation.

Along similar lines, conspiracy related beliefs about biomedical approaches to HIV prevention [20–22] are also likely to affect PrEP implementation, but research in this area has yet to be conducted. Conspiracy beliefs are typically thought to imply that organizations or individuals in power furtively manipulate events in a self-serving manner. Conspiracy beliefs in HIV treatment have been attributed to a historical legacy of mistreatment of race minority populations by medical establishments [23]. For example, it is well-documented that conspiracy beliefs about biomedical strategies—primarily antiretroviral use—for HIV treatment are prevalent and related to poor HIV-related health outcomes, particularly, among HIV positive, race-minority individuals [24]. Given the existence of these beliefs in HIV treatment efforts, it is probable that these beliefs would affect PrEP interest as well.

Study Objectives

The primary focus of the current study was to assess factors associated with interest in using PrEP. This area was examined by evaluating the relationships between sociodemographic variables, health care, PrEP stigma beliefs, PrEP conspiracy beliefs, and sex behaviors (independent variables) and interest in using PrEP (dependent variable). Due to the race/ethnic disparities relating to HIV transmission, results were reported for the whole sample and separately by BMTW and WMTW.

Methods

Setting and Procedures

Anonymous surveys were collected using venue intercept procedures that have been reported in previous studies [21, 25]. Potential participants were asked to complete a survey concerning their health related behaviors as they walked through the exhibit area of a large gay pride festival in the Southeastern United States. For the purposes of completing this study, two booths were rented in the display area of the event. Participants were told that the survey was about well-being and health care behaviors, contained personal questions about their behavior, was anonymous, and would take 15-min to complete. Eighty percent of men who were approached agreed to complete the survey. Participant names were not obtained at any time. Participants were offered \$5 for completing the survey and an additional \$5 was donated to a local HIV service provider.

Measures

Participants completed self-administered surveys measuring socio-demographic characteristics; health care insurance and access; PrEP use, awareness, and interest; PrEP stigma and conspiracy related beliefs; and sex behaviors.

Demographics and Health Care—Participants were asked to report their age, years of education, income, gender identity, race/ethnicity, employment status, relationship status, sexual orientation, HIV status, whether they had health insurance, whether they had a health care provider, whether they had talked with a provider about sexual health in past year, and whether they talked with a health care provider about PrEP. Response set was a dichotomous *Yes/No*.

PrEP Use, Awareness, and Interest—Participants were provided with a standard definition of PrEP. Specifically, as part of the instruction set, the survey read “PrEP (pre-exposure prophylaxis) is when an HIV-negative person takes anti-HIV medications, also known as antiretrovirals and more specifically Truvada, BEFORE HAVING SEX to prevent HIV infection.” Participants then responded *Yes/No* to each of the following: “Have you ever heard of PrEP?” (i.e., PrEP awareness), “Do you know anyone who is taking PrEP?”, “Are you currently taking PrEP?”, and “Would you be interested in taking PrEP?”

PrEP Stigma and Conspiracy-Related Beliefs—Participants were asked three items regarding PrEP stigma specifically focused on stereotyping and two items regarding PrEP conspiracy beliefs. Stigma items included: “PrEP will cause people to have more risky sex”, “Instead of taking PrEP, people should just pick their partners carefully”, and “PrEP is for people who are promiscuous (e.g., “slutty” or “easy”)”; and conspiracy beliefs items included: “The CDC cannot be trusted to tell gay communities the truth about PrEP”, and “When it comes to PrEP, drug companies are lying and taking advantage of us.” Response set for these items included *Strongly Disagree* (1) to *Strongly Agree* (4). Items were developed using three primary approaches: adaptation from other measures of stigma and conspiracy beliefs [24], deduction from the HIV stigma framework [18], and community feedback. Items were generated with a focus on conceptual consistency, similar person-perspective for all items, caution with negatively worded items, assessment of intended meaning, and appropriate literacy level. Due to low scale reliability for the PrEP stigma items (Cronbach’s $\alpha = .50$), and for the conspiracy beliefs items (Cronbach’s $\alpha = .69$), items were treated as individual independent variables in all analyses. For interpretation purposes, items were dichotomized as disagree and agree, and presented as N’s and percentages in the table; however, variables were treated as continuous in all analyses. Participants were also asked, “Have you ever heard of the phrase “Truvada Whore””? Response set was a dichotomous *Yes/No*.

Sexual Behavior—Participants reported the number of male and female sex partners they had in the last 6 months. Further, they were asked the number of times they had engaged in anal intercourse with a man as the insertive and receptive partner without condoms in the past 6 months. Participants also reported the number of condomless vaginal sex acts they engaged in during the past 6 months. An open response format was used.

Data Analysis—Participants were 387 men and 6 transgender women ($N = 393$) surveyed at a Gay Pride Festival in the Southeastern United States in October 2015. Of these participants, 64 were removed due to reporting HIV positive status, 2 were removed for identifying as heterosexual and reporting no male sex partners, 39 were removed for

identifying as a race other than Black/African American or White, and 3 were removed for incomplete data, leaving $N = 285$ participants for all remaining analyses. Twenty-one participants currently taking PrEP were removed from further analyses. In total, $N = 85$ BMTW and $N = 179$ WMTW who reported HIV negative status and not currently on PrEP were included in primary data analyses.

Descriptive data including means and standard deviations, or numbers and percentages were provided for all variables. Bivariate generalized linear modeling (GZLM) with a binary logistic distribution was conducted in order to assess variables relating to interest in PrEP. Estimates that were significant at $p < .10$ were entered into the multivariable analyses. The dependent variable was, "Would you be interested in taking PrEP?" and had a dichotomous *Yes/No* outcome. Analyses were run for the whole sample and separately for BMTW and WMTW. Analyses were also completed for comparing variables between BMTW and WMTW. In a post hoc analysis for further examining findings related to PrEP interest, GZLM was used to evaluate the relationships between PrEP/promiscuity related beliefs, PrEP interest, and sex behaviors. Demographic and health care related variables were used as control variables in analyses. Results were reported as odds ratios (OR) and adjusted odds ratios (aOR). There were less than 5% missing data for any given variable. PASW Statistics version 20.0 (SPSS Inc., Chicago, IL) was used for all analyses.

Results

Findings demonstrated that, on the whole, 44% of the sample was interested in PrEP with 53% ($n = 45$) of BMTW and 39% ($n = 70$) of WMTW reporting interest in using PrEP ($X^2[1] = 4.49, p < .05$). Forty-three percent of the sample had heard of PrEP on a prior occasion. Having previously heard of PrEP was related to greater interest in using PrEP for WMTW and for the total sample, but not for BMTW. For BMTW, WMTW, and the total sample, knowing someone who was taking PrEP was related to interest in using PrEP.

Sociodemographics and PrEP Interest

On average participants reported 'some college' as their highest level of educational attainment, and educational attainment was not associated with interest in using PrEP. A majority of the sample identified as male ($n = 258, 98\%$) and reported being currently employed ($n = 199, 75\%$). Lower income ($\$30,000$) was associated with increased interest in using PrEP for WMTW and for the total sample, but not specifically for BMTW. WMTW who were not in a relationship or who were in a non-monogamous relationship were more likely to report interest in using PrEP than WMTW who were in monogamous relationships, and similar findings were observed for the total sample. Among WMTW, currently having health insurance and a health care provider were associated with a lower likelihood of being interested in PrEP. For the total sample, having health insurance was related to a lower interest in PrEP, and, among BMTW, having a health care provider was related to a lower interest in PrEP (Table 1).

PrEP Stigma, PrEP Conspiracy Beliefs, and PrEP Interest

In regards to PrEP related beliefs, 70% ($N = 186$) of participants agreed that PrEP would cause people to have more risky sex; these beliefs, however, were not related to interest in using PrEP. Believing that individuals should pick their partners more carefully instead of taking PrEP (45%, $N = 120$ endorsed item) was related to a greater likelihood of not being interested in PrEP for BMTW, WMTW, and the total sample. Twenty-three percent ($N = 60$) of the sample believed that PrEP was for individuals who were promiscuous, and this belief was associated with a lack of interest in using PrEP for all groups. Overall, it is noted that PrEP related stigma was related to numbers of sex partners, but not sex behaviors, specifically. Among BMTW, believing that the CDC cannot be trusted in their messaging regarding PrEP was associated with a lower interest in using PrEP. Nineteen percent of the sample had heard of the phrase “Truvada Whore”, however, having heard of this phrase was unrelated to interest in PrEP (Table 2). There were no significant differences across BMTW and WMTW regarding responses to the PrEP stigma beliefs items. BMTW were, however, more likely to report that the CDC cannot be trusted to provide accurate information on PrEP than WMTW (56.5% vs. 43.5%, $X^2(1) = 10.5$, $p < .01$).

Sex Behaviors and PrEP Interest

Reporting a greater number of sex partners was associated with interest in PrEP for WMTW and the total sample, but was nonsignificant for BMTW. The proportion of time condoms were used during both receptive and insertive anal sex was not associated with interest in PrEP (Table 3).

Multivariable Models and PrEP Interest

For the multivariable model among BMTW, believing that PrEP was for people who were promiscuous remained the only variable associated with PrEP interest. Specifically, the more likely BMTW were to believe that PrEP was for promiscuous individuals the less interest they had in using PrEP. In the multivariable model for WMTW, not being in a relationship and being in a non-monogamous relationship versus being in a monogamous relationship, not currently having health insurance, and having ever heard of PrEP were associated with interest in PrEP. The same relationships held for the multivariate model inclusive of the whole sample and, in addition, lower age and believing that PrEP is for people who are promiscuous were associated with reduced interest in PrEP. Number of male sex partners did not remain associated with PrEP interest in any multivariable model (Table 4).

Post Hoc Analyses

Given the strong relationships observed in the multivariable models between endorsing promiscuity related to PrEP and lack of interest in using PrEP, data analyses were completed to investigate these results. Findings demonstrate greater sexual risk taking among individuals who believe that PrEP is for people who are promiscuous; individuals who endorsed this belief reported greater numbers of condomless insertive anal sex acts ($OR = .98[.96-.99]$) and female sex partners ($OR = .73[.55-.97]$). There were no differences for number of male sex partners ($OR = .99[.95-1.04]$), condomless receptive anal sex acts ($OR = .99[.97-1.01]$) and condomless vaginal sex acts ($OR = .99[.84-1.14]$) (Fig. 1).

Discussion

Findings from the current study highlight multiple areas of importance for understanding how PrEP is received by communities in need of HIV prevention options. Multiple noteworthy outcomes were identified, including low levels of PrEP use, moderate levels of interest and awareness in PrEP, and a strong relationship between endorsing promiscuity as being related to PrEP use and lack PrEP interest. Other findings of importance include the relationship between younger age and greater PrEP interest, and the relationship between negative beliefs about PrEP and greater sexual risk taking. Given the state of the HIV epidemic among MTW in the US, it is imperative that researchers, health care providers, and policy makers understand how prevention technologies such as PrEP are received by communities, and this study offers important insights in these areas.

In the current study, levels of PrEP use and awareness were alarmingly low. It is known that PrEP uptake has been slow [10], and the present study's findings suggest that this pattern continues to persist. Further delays in these areas, put simply, costs lives -there is urgent need to bolster efforts to improve awareness and accessibility. Importantly, however, and similar to prior research, it appears that interest in PrEP is at least moderate [26]. We also note that PrEP interest was greater among BMTW than WMTW. Greater interest in PrEP may be the result of the relatively higher HIV prevalence among communities of BMTW compared with that of communities of WMTW. Understanding perceptions of HIV risk between BMTW and WMTW may offer insight into the observed higher interest in PrEP among BMTW. Moving forward, researchers, policy makers, and key stakeholders must prioritize better understanding the key drivers of the gap between PrEP interest and uptake (e.g., [27, 28]). In particular, the extent to which structural and sociocultural barriers contribute to this gap warrants further research.

Although the majority of the sample reported current health care coverage, a health care provider, and had talked with a provider about their sexual health, a significant minority of these individuals did not report having sufficient health care access and individuals lacking health care coverage were more likely to be interested in PrEP. Individuals with no health care coverage may report greater interest in PrEP due to, potentially, having fewer alternative options for HIV prevention than individuals with health care coverage. Meaning, health care coverage may serve as a proxy variable for social capital, which is related to one's ability to access economic goods and social benefits (e.g., condoms, or greater power in negotiating safer sex). With greater access to various prevention options, PrEP may be less appealing, however, further research in these areas is warranted. As more biomedical HIV prevention options emerge that rely on access to and continued involvement with health care systems, including health care coverage and medical providers, it will be imperative that advances in infrastructure co-occur. Without these advances, biomedical prevention options will remain out of reach for many. On the whole, the findings suggest that the basic foundation for successful implementation of PrEP remains under-developed.

In regards to PrEP beliefs, the majority of the sample reported believing that PrEP would cause people to have more sex partners. Although evidence from PrEP studies demonstrate mixed findings regarding the effect of PrEP on sexual risk taking [29–31], based on the

current data, there exists the *perception* that PrEP *will* affect sexual risk taking. It is possible that this belief can have an effect on how people perceive who should or should not take PrEP [32]. Moreover, and importantly, it is known that sex in monogamous relationships is a risk factor for HIV transmission [33], which makes the belief that PrEP is for people who have many sex partners particularly problematic. Also, PrEP is an important form of prevention for individuals in HIV serodiscordant relationships; in this case, HIV prevention strategies are not associated with number of partners but rather the prevention of transmission from sex with a partner who is known to be living with HIV. In either case, the perception that PrEP is for people with multiple sex partners overlooks the need for PrEP for people with one or limited numbers of partners. Addressing the various ways in which individuals process sexual risk taking and the need to take PrEP [34, 35] is a central component to effective messaging behind the promotion of PrEP.

A large minority of the sample believed that PrEP was for people who are promiscuous, and this belief was associated with a lack of interest in PrEP. Furthermore, believing that PrEP was for people who are promiscuous was more likely to be reported among participants with greater sexual risk taking. These findings suggest that individuals who report high levels of sexual risk are most impacted by beliefs that PrEP is associated with promiscuity. Disassociating PrEP from perceptions of promiscuity is likely important for improving uptake. Further, PrEP interest was *not* associated with the belief that PrEP would cause people to have risky sex. Based on the findings, it appears that there is an important distinction between risky sex and sexual promiscuity when endorsing stigma around PrEP use. It is possible that the concept of promiscuity, in general, is evaluated negatively, whereas evaluations regarding sex behaviors do not engender the same negative perceptions. This slight, yet seemingly important, distinction appears to be meaningful in understanding PrEP interest. Public health messaging should take care to highlight the use of PrEP for those who are sexually active regardless of frequencies of sex partners and behaviors. Targeting those who report multiple sex partners as priority candidates for PrEP likely further stigmatizes those who are taking or are interested in taking PrEP, and may discourage others who could benefit from PrEP from seeking it out [36]. Administering routine screenings of PrEP need to all people who are sexually active may promote the destigmatization and normalization of PrEP use.

Data from the current study also highlight an important age disparity in PrEP interest. Older participants were less likely to report an interest in PrEP than younger participants. There is considerable focus on HIV prevention among youth populations due to increasing HIV incidence among this group and federal funding priorities for prevention and treatment tend to target youth populations. This strong focus leaves a void for populations at-risk for HIV who have aged out of targeted groups [37]. Due to the nature of HIV epidemiology, HIV prevalence increases quite dramatically among older age cohorts [38] and therefore, although incidence might not be as dramatic among older populations compared with younger, older MTW age groups have very high prevalence rates of HIV. Messaging for PrEP must be careful to not only include communities with high HIV incidence but also broad target groups to promote inclusion.

Although conspiracy-related beliefs regarding PrEP were largely unassociated with PrEP interest, a large minority of the sample endorsed these beliefs, and for BMTW there was a trend towards conspiracy beliefs being associated with PrEP interest. Undoubtedly, the history of unethical treatment including serious physical and emotional abuse of race-minority populations in medical studies in the US and abroad has given way to a general mistrust of medicine and medical establishments for many individuals. These beliefs are prominent in the HIV treatment landscape [23, 39, 40]. As HIV prevention moves more towards biomedical approaches to slowing the epidemic, developing strong relationships and improving the general social standing of medical establishments, in particular in marginalized communities, will be critical for product scale up.

Limitations

The current study relied on self-reported information and, therefore, may be prone to social desirability biases. Data come from a sample of BMTW and WMTW whose responses may or may not be generalizable to the larger population. Data were also cross-sectional which prevents causal relationships from being evaluated. Low scale reliability suggests that survey items tapped into subcomponents of stigma and conspiracy beliefs—further research is needed to advance the psychometrics of this novel area of inquiry. Our measure of PrEP stigma primarily focused on promiscuity; however, further study in additional and related areas is warranted. For example, the possibility of PrEP being associated with intravenous drug use or minority sexual orientation as a barrier to use is an important area of future research. The extent to which interest in using PrEP serves as a barrier or facilitator to seeking out PrEP is unknown and further research is needed to discern the extent to which PrEP interest is related to uptake of PrEP.

Conclusions

The potential for PrEP to slow the HIV epidemic has been hailed as one of the most significant breakthroughs in the field of HIV prevention. Since FDA approval, however, PrEP uptake has been slow and mired with challenges relating to roll-out and accessibility. Advances in biomedical prevention will not have a population-level effect on HIV prevention without concurrent changes in structural (e.g., health care infrastructure) and sociocultural areas (e.g., beliefs about PrEP). Efforts to implement biomedical forms of HIV prevention must more strongly and comprehensively focus on addressing the gap between developing biomedical prevention options and making these options accessible and sought after.

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Fig. 1.
 Sexual risk behaviors and endorsement of PrEP being related to promiscuity

Table 1

Demographic characteristics of BMTW and WMTW attending a community event in the southeastern US

	BMTW (N = 85) PrEP interest				WMTW (N = 179) PrEP interest				WMTW	Total sample	
	Interested (n = 45)				Interested (n = 70)						Not interested (n = 109)
	M	SD	M	SD	M	SD	M	SD			
Age ^c	30.58	12.33	32.83	11.96	31.93	12.93	39.46	15.27	.96 (.94–.99)***	.97 (.95–.99)***	
	BMTW (N = 85) PrEP interest				WMTW (N = 179) PrEP interest				WMTW	Total sample	
	Interested (n = 45)				Interested (n = 70)						Not interested (n = 109)
	N	%	N	%	N	%	N	%			
Education (M, SD) ^c	14.04	2.07	13.80	2.47	14.51	2.17	14.87	2.19	.93 (.81–1.06)	.95 (.85–1.06)	
Male	45	100	39	97.5	N/A		69	98.6	105	96.3	.71 (.38–1.33)
Transgender Female	0	0	1	2.5			1	1.4	4	3.7	
Income ^c											
\$30,000	27	60.0	17	52.5			35	50.7	35	32.1	.50 (.30–.82)**
> \$30,000	18	40.0	19	47.5			34	49.3	74	67.9	
Employed ^c	30	66.7	27	67.5			58	82.9	84	77.1	1.12 (.63–1.97)
Relationship status											
No relationship	27	60.0	27	67.5 32.5			44	62.9	49	45.0	2.06 (1.20–3.56)**
In non-monogamous relationship	4	8.9	0	0.0			11	15.7	9	8.3	3.68 (1.44–9.38)**
In monogamous relationship (ref)	14	31.1	13				15	21.4	51	46.8	
Sexual orientation ^d											
Gay (ref)	34	75.6	31	77.5			63	90.0	94	87.9	
Bisexual	8	17.8	8	20.0			7	10.0	12	11.2	.52 (.09–3.16)
Hetero sexual	3	6.7	1	2.5			0	0.0	1	0.9	N/A
Currently have health insurance ^c (Yes)	30	66.7	29	72.5			50	72.5	100	91.7	.37 (.20–.68)**

	BMTW (N = 85) PrEP interest				BMTW		WMTW (N = 179) PrEP interest				WMTW		Total sample
	Interested (n = 45)				N = 85		Interested (n = 70)				N = 179		
	M	SD	M	SD	OR (95% CI)	M	SD	M	SD	M	SD	OR (95% CI)	
Age ^c	30.58	12.33	32.83	11.96	.99 (.95–1.02)	31.93	12.93	39.46	15.27	.96 (.94–.99)**	.97 (.95–.99)***		
	BMTW (N = 85) PrEP interest				BMTW		WMTW (N = 179) PrEP interest				WMTW		Total sample
	Interested (n = 45)				N = 85		Interested (n = 70)				N = 179		
	N	%	N	%	OR (95% CI)	N	%	N	%	N	%	OR (95% CI)	
Have health care provider a (Yes)	31	68.9	34	85.0	.39 (.13–1.14) ^a	56	81.2	102	93.6	.30 (.11–.78)*	.31 (.15–.63)		
Talked with health care provider about sexual health past year (Yes)	27	60.0	30	76.9	.45 (.17–1.17)	39	56.5	61	56.0	1.02 (.56–1.88)	.86 (.52–1.42)		
Health care provider has talked about PrEP ^b (Yes)	11	24.4	10	25.0	.97 (.36–2.61)	9	13.0	15	13.8	.94 (.39–2.28)	1.06 (.55–2.01)		

* $p < .05$,** $p < .01$,*** $p < .001$ ^a $p < .10$ ^b Significantly higher mean/percent among BMTW as compared with WMTW^c Significantly higher mean/percent among WMTW as compared with BMTW^d BMTW significantly more likely to report being bisexual and less likely to report being heterosexual than WMTW

PrEP beliefs and interest among BMTW and WMTW attending a community event in the southeastern US

Table 2

	BMTW (N = 85) PrEP interest				WMTW (N = 179) PrEP interest				Total sample	
	Interested (n = 45)		Not interested (n = 40)		Interested (n = 70)		Not interested (n = 109)		N = 179	N = 264
	N	%	N	%	N	%	N	%		
Have you ever heard of PrEP? ^c (Yes)	28	62.2	18	45.0	60	85.7	62	56.9	4.55 (2.11–9.82) ***	2.81 (1.64–4.82) ***
Do you know anyone who is taking PrEP? (Yes)	17	37.8	8	20.0	38	54.3	27	24.8	3.61 (1.90–6.84) ***	2.99 (1.76–5.06) ***
PrEP will cause people to have more risky sex	34	75.5	27	67.5	45	64.2	80	73.4	.65 (.34–1.25)	.89 (.67–1.19)
Instead of taking PrEP, people should just pick their partners carefully	21	46.6	25	62.5	24	34.2	50	46.3	.74 (.54–1.02) ^a	.77 (.61–.91)*
PrEP is for people who are promiscuous (for example, “slutty” or “easy”)	5	11.1	15	37.5	9	12.9	32	29.9	.58 (.40–.84) ***	.54 (.40–.72) ***
The CDC cannot be trusted to tell gay communities the truth about PrEP ^b	15	33.3	22	55.0	17	24.2	25	23.8	.96 (.68–1.37)	.88 (.67–1.15)
When it comes to PrEP, drug companies are lying and taking advantage of us	11	24.4	17	42.5	19	27.1	33	31.1	.82 (.56–1.20)	.80 (.60–1.06)
Heard phrase “truvada whore.”	9	20.0	11	27.5	16	23.2	15	13.8	1.88 (.86–4.17)	1.33 (.72–2.44)

 $p < .001$ ^a $p < .10$ ^b Significantly higher mean/percent among BMTW as compared with WMTW^c Significantly higher mean/percent among WMTW as compared with BMTW

Table 3

Sexual behaviors and PrEP interest among BMTW and WMTW attending a community event in the southeastern US

	BMTW (N = 85) PrEP interest				WMTW (N = 179) PrEP interest				Total sample	
	Interested (n = 45)		Not interested (n = 40)		Interested (n = 70)		Not interested (n = 109)		N = 179	N = 264
	M	SD	M	SD	M	SD	M	SD	aOR (95% CI)	aOR (95% CI)
In past six months:										
Number of male sex partners	3.38	4.78	2.23	2.52	5.21	7.42	2.55	7.02	1.06 (1.01–1.12)*	1.07 (1.01–1.12)*
Number of receptive, condomless anal sex acts ^b	2.05	4.97	.95	3.19	6.43	14.93	4.78	15.95	1.01 (.99–1.03)	1.01 (.99–1.03)
Number of insertive, condomless anal sex ^b	3.14	6.75	1.55	4.95	4.59	8.52	6.67	22.45	.99 (.97–1.01)	.99 (.98–1.01)
Number of female sex partners ^a	.56	1.79	.50	1.75	.12	.66	.05	.22	1.44 (.66–3.13)	1.10 (.87–1.39)
Number of condomless vaginal sex acts	.51	1.84	.43	1.38	.03	.18	.42	2.33	.70 (.33–1.47)	.94 (.79–1.11)

* $p < .05$ ^aSignificantly higher mean/percent among BMTW as compared with WMTW^bSignificantly higher mean/percent among WMTW as compared with BMTW

Table 4

Multivariate models of factors related to PrEP interest among BMTW and WMTW attending a community event in the southeastern US

	PrEP interest		
	BMTW (N = 85)	WMTW (N = 179)	Total sample (N = 264)
	Model 1	Model 2	Model 3
Age	N/A	.98 (.95–1.01)	.98 (.95–1.00) ^a
Income	N/A	.69 (.29–1.68)	.68 (.34–1.35)
Relationship status			
No relationship		2.72 (1.20–6.17) *	1.90 (1.02–3.53) *
In non-monogamous relationship	N/A	4.03 (1.11–14.66) *	4.68 (1.49–14.73) **
In monogamous relationship (ref)			
Currently have health insurance (Yes)	N/A	.23 (.07–.78) *	.34 (.16–.72) **
Have health care provider (Yes)	.46 (.15–1.44)	1.06 (.27–4.09)	N/A
Have you ever heard of PrEP? (Yes)	N/A	4.36 (1.75–10.34) **	2.99 (1.59–5.65) **
Instead of taking PrEP, people should just pick their partners carefully.	.85 (.56–1.30)	.83 (.54–1.28)	.85 (.64–1.14)
PrEP is for people who are promiscuous (e.g., “slutty” or “easy”).	.51 (.30–.87) **	.68 (.43–1.08)	.56 (.39–.78) **
The CDC cannot be trusted to tell gay communities the truth about PrEP.	.82 (.46–1.44)	N/A	N/A
Number of male partners	N/A	1.02 (.97–1.08)	1.03 (.98–1.09)

**
 $p < .01$,

*
 $p < .05$

^a
 $p = .05$