



Published in final edited form as:

J Acquir Immune Defic Syndr. 2025 June 01; 99(2): 123–127. doi:10.1097/QAI.0000000000003650.

Behavioral Readiness for Daily Oral PrEP in a Diverse Sample of Gay, Bisexual, and Other Men who have Sex with Men Who Have Not Been Offered PrEP by a Provider

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Abstract

Background: Daily oral pre-exposure prophylaxis (PrEP) use among gay, bisexual, and other men who have sex with men (GBMSM) remains suboptimal. Assessing behavioral readiness for PrEP use among GBMSM who can benefit and offering PrEP may increase uptake among GBMSM. We measured 4-item readiness for taking PrEP among GBMSM who have not been offered PrEP by a provider.

Methods: GBMSM in Atlanta, Chicago, and Raleigh-Durham reporting recent condomless anal sex were assessed for “readiness” to discuss PrEP with a provider, test for HIV, take a daily pill, attend provider appointments, and a 4-component composite score for PrEP readiness. Chi-square tests and multivariable logistic regression were applied to examine factors associated with readiness to use PrEP.

Results: Study sample (n=187) was 51% Black/African American, 15% Hispanic/Latino, 30% identified as bisexual or straight or other, and 29% had no health insurance. 55% said they were ready to discuss PrEP with a provider, 88% were ready to get an HIV test, 45% were ready to take a daily pill, 48% were ready to attend appointments, and 37% reported overall PrEP readiness. Having no health insurance was associated with readiness for a daily pill (AOR=2.78, CI=1.34–5.78) and 4-item PrEP readiness (AOR=2.34, CI=1.13–4.85). Self-identification as gay (vs bisexual/straight) was associated with readiness to discuss PrEP (AOR=2.14, CI=1.05–4.36).

Conclusion: Only 37% of GBMSM with recent condomless anal sex were ready for PrEP based on the 4-item readiness. Readiness may differ based on sexual identity, insurance status, and other characteristics. Efforts are needed to increase readiness across behavioral components of PrEP use.

Introduction

Daily oral HIV pre-exposure prophylaxis (daily PrEP) has been available in the United States since 2012 and PrEP use has increased over the last decade.^{1,2} However, PrEP

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Conflicts of Interest: The authors have no conflicts of interest to declare.

use remains suboptimal among gay, bisexual, and other men who have sex with men (GBMSM) who could benefit.^{3,4} Factors associated with the lower uptake of daily PrEP among GBMSM are multifaceted, including knowledge, attitudes, beliefs, and concerns about side effects at an individual-level, negative experiences with healthcare providers, PrEP-related stigma, and PrEP norms in sexual and social networks at a community-level, and high out-of-pocket expenses and lack of insurance coverage at a policy-level.⁵⁻⁷

Individual-level factors associated with daily PrEP use play an important role, in particular, among GBMSM who could benefit from PrEP use and were not offered PrEP by a provider. Among this unique group of GBMSM, some men might be ready for PrEP use if they are offered by a provider and some men may not be ready for daily PrEP use.⁸⁻¹⁰ Offering PrEP to all GBMSM who can benefit from PrEP is recommended by the CDC's PrEP guidelines and is critical to increase PrEP uptake.¹¹ While there are studies that assessed the willingness and readiness for PrEP among GBMSM with indications for PrEP use,¹² to our knowledge there were no studies that focused on readiness for PrEP among men who have not been offered PrEP by a provider. Identifying GBMSM who are ready to take daily PrEP and offering it to them could lead to PrEP initiation.^{8,10,13} PrEP readiness is more complex than simply accepting it when offered by a provider and includes motivational and attitudinal beliefs about discussing PrEP with the provider, getting tested for HIV, following a daily pill regimen, and ability to attend medical appointments at regular intervals.^{14,15}

Assessing the overall readiness for daily oral PrEP among individuals with indications for PrEP and have not been offered PrEP by a provider, may provide an opportunity to identify men who are more likely to use daily oral PrEP and increase prescribing PrEP by providers. In this study, we measured and examined the factors associated with 4-item readiness for a daily oral PrEP among GBMSM who could benefit from PrEP use and who haven't been offered PrEP by a provider.

Methods

Data for this analysis were derived from the 2019 iQual Prepare for PrEP Study conducted to examine the PrEP related outcomes and associated behavioral factors among GBMSM in Atlanta, Chicago, and Raleigh-Durham.¹⁶ Study participants were recruited at events sponsored and hosted by partner community-based organizations, local agencies, and health clinics in Atlanta, Chicago, and Raleigh-Durham. Participants completed the in-person self-administered eligibility screener at the study sites. All eligible participants completed the in-person self-administered computer based behavioral assessment immediately at the study sites. Eligibility criteria included self-reported HIV-negative status or unknown or never tested; male; 18 years of age or older; report condomless anal sex (without PrEP use) with a male partner in the past six months; not offered PrEP by a provider or counselor in the past six months; and resided in Chicago, Raleigh-Durham, or Atlanta at the time of data collection.

Readiness for daily oral PrEP was assessed by the 4 key items focused on discussing PrEP with provider, HIV testing, taking daily pill, and attending appointments as:

If you were to start taking PrEP today, how ready would you be to do each of the following actions:

1. Meet with a doctor or other provider to discuss PrEP.
2. Get tested for HIV infection.
3. Take a PrEP pill every day for the next few months.
4. Attend monitoring appointments with a doctor or other provider every few months.

The response options for the 4 items were recorded on a 5-point Likert scale (1 - Not at all ready, 2 - A little ready, 3 - Somewhat ready, 4 - Mostly ready, 5 - Entirely ready). For each item, participants were considered “ready” if they responded with “mostly ready” and “entirely ready.” For the 4-component composite score for full regimen, participants who responded with “mostly ready” and “entirely ready” for all 4 items.

Data analysis

We conducted chi-square tests to examine the bivariate associations between the demographic characteristics (age, race and ethnicity, education, sexual identity, and health insurance status) and the four separate readiness components and the overall readiness for daily oral PrEP. Multivariable logistic regression models were conducted to assess the independent associations between the demographic characteristics and the readiness for daily oral PrEP (separate models for four individual components and overall readiness). All models were adjusted for the sociodemographic characteristics of race/ethnicity, age group, education level, sexual identity, and health insurance status. All data analyses were performed by using SAS[®] 9.4. Study procedures were approved and monitored by the CDC Institutional Review Board (Protocol #7031).

Results

The study sample consisted of 51% Black/African American, 15% Hispanic/Latino, and 34% White or Other GBMSM. Seventy percent of the men identified as gay, 21% as bisexual, 4% as straight, and 5% as other (bisexual or straight). Nearly one-third (31%) were in the age-group of 18–25 years, 41% were in 26–35 years, and 28% were 36 years or older. Forty-two percent reported having at least a 4-year college degree, 26% had some post high school training, and 31% reported having high school/general education degree. Twenty-nine percent reported not having a health insurance coverage.

Fifty-five percent of the sample were ready to discuss daily oral PrEP with a provider, 88% were ready to get an HIV test, 45% were ready to take a daily pill, and 48% were ready to attend appointments. Based on the composite score of the four items that measured readiness, 37% of the sample indicated overall PrEP readiness. In bivariate analysis (Table 1), a 3-level education variable was associated with overall PrEP readiness ($\chi^2 = 7.22$, $p = 0.027$). Self-identified sexuality as gay (vs bisexual or straight) was associated with readiness to discuss daily oral PrEP with a provider ($\chi^2 = 5.15$, $p = 0.023$) and readiness to get an HIV test ($\chi^2 = 4.12$, $p = 0.042$). Having no health insurance (having health insurance)

was associated with readiness to take a daily oral pill ($\chi^2 = 9.36$, $p = 0.002$), to attend appointments ($\chi^2 = 4.07$, $p = 0.044$), and overall PrEP readiness ($\chi^2 = 8.45$, $p = 0.004$).

In multivariable regression analysis for each PrEP-related behavior and overall readiness (Table 2), GBMSM who did not have health insurance reported greater odds of readiness to take a daily oral pill (AOR=2.78, CI = 1.34–5.78) and overall PrEP readiness (AOR=2.34, CI=1.13–4.85), compared to men who had health insurance. GBMSM who identified as gay had greater odds of readiness to discuss PrEP with a provider (AOR=2.14, CI=1.05–4.36), compared to men who identified as bisexual or straight. GBMSM with some post high school training had greater odds of overall PrEP readiness (AOR = 2.34, CI = 1.04–5.29), compared to those with a 4-year degree or higher.

Discussion

Only 37% of GBMSM who reported recent condomless anal sex and who were not offered PrEP by a provider in the past 6 months, indicated they were mostly or entirely ready for PrEP based on a 4-item behavioral readiness assessment. Of the necessary four behaviors to taking PrEP, readiness to get an HIV test was highest (88%), while readiness to discuss PrEP with a provider (55%), take a daily pill (45%), and attend appointments (48%) were lower. The 4-item PrEP readiness tool could be used as a low-cost prevention tool with less administrative burden in clinical and non-clinical settings to assess for readiness of PrEP uptake among men who can benefit from PrEP use.

The study finding that men who do not have health insurance coverage reported higher readiness to take a daily oral pill and overall PrEP readiness was unique. There is indeed an interest and readiness for PrEP use among GBMSM with no insurance, which calls for discussions about PrEP and offering PrEP to men without insurance as well. A meta-analysis focused on PrEP use willingness found that health insurance was not significantly associated with willingness to PrEP use among GBMSM.¹² A possible reason that explains this finding is that these men have the awareness of the financial assistance programs that reduce the cost of PrEP uptake.¹² Regardless, this finding supports expanding health insurance coverage and providing financial assistance as strategies to increase PrEP uptake. The finding of not having insurance not significantly associated with the readiness to discuss PrEP with a provider, attend appointments, and HIV testing could be because these three behaviors (compared to taking daily pill) might be impacted by the PrEP-related service fees including provider visits and HIV tests.¹² Further, men without health insurance may also experience unstable employment, which could impact the ability to make appointments and get HIV testing due to the associated expenses. There is need for more research to examine how health insurance impacts overall and individual components of readiness for PrEP. Men who self-identified as gay (vs bisexual or straight) were more ready to discuss PrEP with a provider. Current PrEP messaging is geared towards self-identified and culturally integrated GBMSM which could have led to normalization of discussions about PrEP among this community. However, PrEP messaging focused on and in the forums where GBMSM who identify as bisexual or straight engage, might be needed to increase PrEP readiness among these men.

Among GBMSM who can benefit from PrEP, there may be several groups of men based on the assessment of behavioral readiness for PrEP use. One such group is men who are ready to use PrEP if they are offered it by a provider. Another group is men who, overall, indicate they are not behaviorally ready to use PrEP. For men who have lower readiness, the priority remains to increase readiness on all four components. These men may have awareness, knowledge, and even interest in PrEP; however, those factors are not enough for successful PrEP uptake. Readiness for key required behaviors is also important for PrEP use. For GBMSM with lower PrEP readiness, additional counseling and discussions focused on existing risk behavior and PrEP benefits may increase readiness for PrEP uptake. In our sample, higher readiness for getting an HIV test indicate some success of the current messaging and reducing barriers for testing among GBMSM. However, lower readiness to discuss PrEP with a provider, to take a daily pill, and to attend appointments highlight the need for messaging and addressing the barriers specific to these components of readiness. For men who are ready to use PrEP if offered, it might be critical to increase PrEP prescribing by healthcare providers. Nearly one-third of participants in our study were ready for daily oral PrEP, who may have accepted PrEP if their healthcare providers had offered. Reasons for not offering PrEP by health care providers include inadequate knowledge and awareness about PrEP among providers, “purview paradox” where some providers believe other specialized providers are better equipped to prescribe PrEP, and provider’s concern about “risk compensation” (using PrEP might increase the behaviors that increase HIV risk).⁶ Efforts are needed to increase awareness of the PrEP guidelines and the risks and benefits of PrEP use among providers and address the barriers for PrEP prescription. Educational interventions, like professional detailing, were effective in improving the beliefs about PrEP safety among healthcare providers.^{17,18}

Our study sample was diverse with nearly two-thirds of participants from racial and ethnic minority groups; however, the study findings may have limited generalizability as we used convenience sampling from three US cities. PrEP readiness tool used in this study is limited to measuring only 4 aspects of behavioral readiness and it was not validated, which are limitations for this study. The small sample size of this study may have limited our analysis in detecting some significant associations. Our findings are only focused on the readiness for daily oral PrEP use given the limited availability of PrEP modalities and recommendations given at the time of the study, and daily oral PrEP is the most used PrEP option in the US.¹⁹ However, our findings may not be applicable to newer PrEP options such as event-driven (2–1-1 dosing) and long-acting injectable PrEP.

Conclusions

Findings from this study that assessed the overall behavioral readiness for daily oral PrEP among GBMSM who can benefit from PrEP use found a lower overall readiness for PrEP use. Higher readiness to get an HIV test for PrEP prescription is encouraging, however, the lower readiness to discuss with a provider, to take a daily pill, and to attend appointments highlights the need for tailored PrEP messaging and addressing the barriers to increase readiness. Surprisingly, men without insurance had greater odds of readiness, indicating the need to offer PrEP to all GBMSM who can benefit regardless of their insurance status. The 4-item PrEP readiness tool may be used routinely to identify men who are motivated to start

PrEP use when offered by a healthcare provider. Offering PrEP to these men may address an individual-level barrier and can increase PrEP uptake and might help to achieve EHE goals.²⁰

Funding Details:

This work was supported by the U.S. Centers for Disease Control and Prevention, under Contract No. 200-2013-57341.

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Table 1.

Characteristics and readiness for PrEP among GBMSM who were not recently offered PrEP by a provider, in Atlanta, Georgia, Chicago, Illinois, and Raleigh-Durham, North Carolina, US, 2019 (n=187).

	<i>Ready to...</i>							
	Discuss PrEP	HIV Testing	Take Daily Pill	Appointments	Full Regimen			
	n (%)	n (%)	n (%)	n (%)	n (%)			
Total	187 (100)	102 (55)	85 (45)	90 (48)	70 (37)			
Race and Ethnicity								
Non-Hispanic Black/African American	95 (51)	53 (56)	45 (47)	49 (52)	41 (43)			
Hispanic/Latino	28 (15)	14 (50)	11 (39)	12 (43)	9 (32)			
Non-Hispanic White/other	62 (34)	34 (55)	28 (45)	28 (45)	19 (31)			
Age group, years								
18-25	59 (31)	33 (56)	26 (44)	27 (46)	20 (34)			
26-35	76 (41)	41 (54)	35 (46)	37 (49)	31 (41)			
36+	52 (28)	28 (54)	24 (46)	26 (50)	19 (37)			
Education level								
<=HS Diploma/GED	58 (31)	32 (55)	28 (48)	34 (59)	25 (43) *			
Some post HS training	49 (26)	30 (61)	28 (57)	26 (53)	24 (50)			
>=4-year college degree	78 (42)	40 (51)	29 (37)	30 (38)	21 (27)			
Self-identification								
Gay	130 (70)	78 (60) *	62 (48)	66 (51)	51 (39)			
Bisexual or Straight	55 (30)	23 (42)	22 (40)	22 (40)	18 (33)			
Health Insurance Coverage								
Yes	130 (71)	66 (51)	50 (38) *	56 (43) *	40 (31) *			
No	52 (29)	34 (65)	33 (63)	31 (60)	28 (54)			

* p < 0.05; HS - high school; GED - general education degree; AOR - adjusted odds ratio; CI - confidence interval

Table 2.

Multivariable Analysis of Characteristics Associated with Readiness for PrEP among GBMSM, in Atlanta, Georgia, Chicago, Illinois, and Raleigh-Durham, North Carolina, US, 2019 (n=187).

	Ready to ...			
	Discuss PrEP AOR (95% CI)	HIV Testing AOR (95% CI)	Take Daily Pill AOR (95% CI)	Full Regimen AOR (95% CI)
Race and Ethnicity				
Non-Hispanic White/other (reference)				
Non-Hispanic Black/African American	1.08 (0.51–2.30)	0.97 (0.31–3.11)	0.82 (0.38–1.76)	0.93 (0.44–1.98)
Hispanic/Latino	0.79 (0.31–2.01)	1.09 (0.25–4.77)	0.68 (0.26–1.79)	0.79 (0.31–2.03)
Age group				
36+ years (reference)				
18–25 years	1.00 (0.45–2.24)	1.48 (0.49–4.45)	0.81 (0.36–1.84)	0.81 (0.36–1.82)
26–35 years	0.87 (0.41–1.87)	2.73 (0.83–8.95)	0.98 (0.45–2.11)	0.90 (0.42–1.93)
Education level				
>=4yr Degree (reference)				
HSDiplomaGED	1.19 (0.35–2.68)	1.12 (0.33–3.81)	1.49 (0.65–3.40)	2.19 (0.97–4.95)
Some post HS training	1.33 (0.61–2.89)	1.09 (0.32–3.66)	2.19 (0.99–4.83)	1.70 (0.78–3.70)
Self-identification				
Bisexual or Straight (reference)				
Gay	2.14 (1.05–4.36)*	1.73 (0.64–4.66)	1.37 (0.66–2.81)	1.78 (0.86–3.65)
Health Insurance				
Yes (reference)				
No	1.84 (0.88–3.83)	0.88 (0.31–2.56)	2.78 (1.34–5.78)*	1.72 (0.84–3.52)
				2.34 (1.13–4.85)*

* p < 0.05; HS -high school; GED - general education degree; AOR - adjusted odds ratio; CI - confidence interval