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# Low Self-perceived Need for PrEP and Behavioral Indications of MSM who Recently Refused Daily PrEP: A Mixed Methods Study in Three U.S. Cities

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## Abstract

Pre-exposure prophylaxis (PrEP) reduces sexual risk for HIV transmission by 99% when used appropriately, but remains underutilized among gay, bisexual, and other men who have sex with men (MSM). In this mixed-method study, we describe reasons for PrEP refusal associated with low self-perceived need for PrEP among MSM who recently declined daily oral PrEP when offered by a provider. Data are from a quantitative behavioral survey of MSM (N=93) living in Atlanta, Chicago, and Raleigh-Durham, who also either responded to an in-depth interview (n=51) or participated in one of 12 focus groups (n=42). Themes of low self-perceived need for PrEP were: low self-perceived risk for HIV acquisition (33% of respondents); confidence in remaining HIV-negative (35%); using condoms (81%); limiting number of partners and choosing partners carefully (48%); asking partners about their HIV status before having sex (45%); engaging in safer sexual positions or oral sex (28%); being in a monogamous relationship or exclusivity with one partner (26%); and regular HIV testing (18%). Low self-perceived risk for HIV acquisition and high confidence in other prevention strategies were important factors related to low self-perceived

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need in MSM refusing daily oral PrEP when offered. Providers should continue to discuss the benefits of PrEP as a safe and highly effective option for HIV prevention.

## Resumen

La profilaxis pre-exposición (PrEP) reduce el riesgo de transmisión sexual por el VIH en un 99% cuando se utiliza apropiadamente, pero sigue siendo subutilizada entre hombres gais, bisexuales y otros hombres que tienen sexo con hombres (HSH). En este estudio de método mixto, describimos los motivos del rechazo de la PrEP asociados a la baja necesidad autopercibida de la PrEP entre los HSH que recientemente rechazaron la PrEP oral diaria, cuando fue ofrecida por un proveedor de salud. Los datos provienen de una encuesta cuantitativa de comportamiento de los HSH (N=93) que viven en Atlanta, Chicago y Raleigh-Durham, quienes también respondieron a una entrevista en profundidad (n=51) o participaron en uno de los 12 grupos focales (n =42). Los temas de baja necesidad autopercibida del uso de la PrEP fueron: el bajo riesgo auto percibido de contraer el VIH (33% de los encuestados); la confianza en seguir siendo VIH negativo (35%); utilizar condones (81%); limitar el número de parejas sexuales y elegir las parejas cuidadosamente (48%); preguntar a sus parejas sobre su estado de VIH antes de tener relaciones sexuales (45%); participar en posiciones sexuales más seguras o sexo oral (28%); estar en relación monógama o de exclusividad con una sola pareja (26%); y hacerse pruebas del VIH regularmente (18%). El bajo riesgo autopercibido de contraer el VIH y la alta confianza en otras estrategias de prevención fueron factores importantes relacionados con la baja necesidad autopercibida en los HSH que rechazaron la PrEP oral diaria cuando se les ofreció. Los proveedores de salud deben continuar el diálogo sobre los beneficios de la PrEP como una opción segura y altamente eficaz para la prevención del VIH.

### Keywords

Perceived HIV risk; confidence in condom use; HIV prevention strategies

## Introduction

Gay, bisexual, and other men who have sex with men (MSM) accounted for nearly 84% of HIV diagnoses among men in the United States in 2021 [1]. HIV pre-exposure prophylaxis (PrEP) can effectively reduce transmission of HIV through sexual intercourse among MSM by 99% when used as prescribed [2–5]. Although PrEP use among MSM with behavioral indications has increased in recent years to an estimated 35% [6, 7], PrEP remains underutilized by some MSM who could benefit. Studies have estimated lower uptake among racial and ethnic minority MSM in the US [6, 8, 9], and MSM living in the US South [10–12]. Increasing PrEP utilization among MSM with behavioral indications is a critical area of focus in the National HIV/AIDS Strategy [13].

Structural factors such as cost, access to PrEP, insurance, homophobia, and community stigma about PrEP use are important drivers for low PrEP uptake among some MSM [14–16], and strategies addressing structural factors are necessary to increase PrEP use in this population. However, for some MSM with behavioral indications, individual-level factors such as low self-perceived need may play a vital role in the decision not to use PrEP [17,

18]. Self-perceived need is an important construct that determines whether an individual would seek prevention or treatment options for an undesired health condition such as HIV [19, 20]. Self-perceived need is influenced by factors such as self-perceived risk of a poor health condition, low confidence in prevention or treatment options, stigma, and other factors [19, 20]. PrEP uptake and persistence have been associated with self-perceived need among MSM [21, 22]. MSM who have lower self-perceived risk for HIV acquisition have lower self-perceived need for HIV PrEP and are less willing to use it [22, 23]. Conversely, MSM who believe their behaviors increase their risk for acquiring HIV are more likely to consider PrEP use as a preventive option [21, 24]. Collectively, self-perceived need for PrEP and perceived risk for HIV could influence the decision to accept or refuse PrEP.

Self -perceived need for PrEP may differ by behavioral indications such as having multiple sexual partners, an HIV-positive primary partner, and condomless anal sex (CAS) [15, 21]. Behaviors that increase the chances of HIV acquisition may be linked to increased self-perceived risk for HIV [25]. MSM with multiple sexual partners have reported greater interest in using PrEP than other men [26, 27], and MSM with an HIV-positive partner were more likely to use PrEP [28]. Nonetheless, PrEP utilization among MSM with behavioral indications continues to be relatively low [6]. Self-perceived need for PrEP may be low even among MSM who could benefit from using it [23, 29], suggesting a misalignment with PrEP need based on the behavioral indications described in the CDC PrEP guidelines (HIV-positive partner not known to be virally suppressed, sex with an unknown status partner without condoms, or bacterial STD) [30, 31].

Reasons for PrEP refusal among those who were offered PrEP by a healthcare provider could play an important role in the decision to initiate or refuse PrEP and may be different from other barriers such as lack of awareness, access, and provider willingness to prescribe PrEP [32]. While studies have examined various reasons for PrEP refusal among MSM when offered by healthcare providers [32, 33], few studies have focused on self-perceived need [23]. Results from studies that explore self-perceived need-based reasons for PrEP refusal among MSM may be used to inform and facilitate healthcare provider discussions about the benefits of PrEP use. To address these gaps in understanding for PrEP implementation, herein we analyze data from a mixed-methods study of MSM who recently refused PrEP offered by a provider. We used convergent parallel design (i.e., qualitative and quantitative data are collected concurrently, data were merged during analysis and interpretation) to assess key reasons for refusal of daily oral PrEP associated with low self-perceived need for PrEP, and differences in refusal reasons based on recent condomless anal sex (CAS) and other behavioral indications for PrEP.

## Methods

Data are from the iQual Prepare for PrEP (P4P) study, a mixed-methods study to understand the decisions about PrEP refusal among MSM who experience high risk for HIV acquisition in Atlanta, GA, Chicago, IL, and Raleigh-Durham, NC, in 2019. These three geographically diverse cities were in the list of top 10 states that accounted for over 60% of the new HIV diagnoses in 2018 and represent some of the most high-risk communities in the U.S., based upon recent HIV prevalence and incidence estimates [34]. A two-stage purposive sampling

was employed to recruit study participants. In the first step, partnerships were formed with community-based organizations, local agencies, and health clinics in each of the three cities listed above. In the second step, eligible men were recruited by methods including referrals at health clinics, posters/flyers at organizations and on social media [35]. Eligibility criteria were cisgender male, age 18 or older, self-reported HIV-negative status (or unknown/never tested), reported CAS with a male partner (past 6 months), offered daily oral PrEP by a provider/counselor and refused it (past 6 months), and residence in one of the three cities noted. Participants who responded to the online social media advertisements completed a re-screening for study eligibility in person, which was administered by an interviewer at the study sites. This allowed to recruit only the eligible participants into the study. The analytic sample was n=93 MSM who participated in both a quantitative behavioral survey and either a qualitative in-depth interview or focus group discussion. The self-administered quantitative survey included demographic characteristic and behavioral assessment items. Trained qualitative researchers conducted in-depth interviews (n=51) and 12 focus group discussions (n=42) with study participants. Responses from the participants in the focus group discussions were identified using a unique study ID which allowed differentiation of individual responses.

## Measures

Demographic characteristics were coded by age group (18-24, 25-34, 35-44, 45+ years old), race/ethnicity (Hispanic/Latino, non-Hispanic Black/African American [Black], non-Hispanic White [White], other/multiracial), educational attainment (<= high school diploma/GED, some post high school training, >= 4-year college degree), employment status (full-time, part-time/unemployed), health insurance status (insured, uninsured), sexual orientation identification (gay, bisexual/other), and city (Atlanta, Chicago, and Raleigh-Durham).

Participants were asked a series of questions about their sexual behavior. For assessing CAS, we asked, “In the past 6 months, have you had anal sex with a man without using a condom?” (Yes/No). For primary male partner, “Have you had a primary male partner in the past 3 months?” (Yes/No). For primary partner’s HIV status, “What is your primary male partner’s HIV status?” (Positive/Negative/I don’t know or I am unsure about his HIV status), and for multiple sex partners, “In the past 3 months, with how many men other than your most recent primary partner did you have any anal sex? This includes times when you were a top or bottom, used or didn’t use a condom, and whether or not there was ejaculation.” (If the response is >= 1, then coded as “Yes” for multiple partners). Questions focused on the knowledge of PrEP, self-perceived risk for HIV acquisition, self-perceived PrEP need, and other strategies for HIV prevention were assessed from in-depth interviews and focus group discussions (Table 1).

## Analytic Strategy

**Behavioral Typology Groups.—**Descriptive statistics for participant behavioral and demographic characteristics were assessed using survey data collected from participants. Recent CAS (past 6 months) was an eligibility criterion for inclusion in the study. We distinguished two groups based on the behavioral indications of MSM: (1) MSM who also

reported multiple sexual partners (past 3 months) and/or an HIV positive primary partner (past 3 months); and (2) MSM who reported CAS only.

**Qualitative Data.—**Data from the in-depth interview and focus group discussions were systematically analyzed using a qualitative content analysis approach [36]. This approach includes creating a common coding structure and a sequential process of modifying the coding frame and analyzing the data using the coding frame. First, a preliminary coding scheme was developed by creating specific definitions for each code with corresponding inclusion/exclusion criteria. The preliminary coding scheme included definitions of the deductive codes, which were based on the study objectives and study guides. The coding team members applied the preliminary scheme to an interview and as new inductive codes emerged inclusion and exclusion criteria were refined. Further the coding scheme was updated with new definitions and criteria. Refinement and development of new codes was iterative, as new or subtler patterns and variations emerged. Next, the coding scheme was applied to the interview transcripts and intercoder agreement was calculated using NVivo's coding comparison tool. Codes with lower agreement scores were identified, and the team discussed their use and refined the inclusion/exclusion criteria. Once each coder achieved an agreement of Cohen's Kappa score = 0.7 and at least 70% of codes scored Cohen's Kappa > 0.7, the remaining transcripts were coded. Kappa scores of 0.7 or better are considered as a measure of "substantial" intercoder agreement [37]. The coding team conducted three rounds of intercoder reliability exercises for the in-depth interviews and four rounds for the focus group discussions. Connections between the final codes were explored based on the research objectives. Continuous comparison of the codes and similarities between codes were examined to identify of patterns and emergence of study themes [38]. Illustrative quotes reflecting the perspectives of the participants were identified for each theme from the respective qualitative codes.

We categorized the study themes that emerged from the final codes into the two behavioral groups defined above separately, given their distinct behavioral indications for PrEP. We conducted Chi-square tests (alpha < 0.05) to examine differences between the two groups. Qualitative analyses were performed using NVivo 11 (QSR International [Americas] Inc., Burlington, MA). Quantitative analyses were performed using SAS® 9.4 (SAS Institute, Cary, NC).

## Results

In our sample of MSM who recently refused PrEP offered by a healthcare provider (n=93), 62% reported having multiple sex partners in the past 3 months, 7% reported having a primary male partner with HIV in the past 3 months, and all participants reported CAS in the past 6 months as required by enrollment criteria (Table 2). Over 70% of the men were less than 35 years old (22% in 18-24 years and 49% in 25-34 years), 68% identified as Black, 22% as White, and 9% as Hispanic/Latino. Seventy-two percent (72%) reported education less than a 4-year college degree, 46% were unemployed or employed part-time, and 34% were uninsured for health care. For the behavioral risk typology analyses, 66% (n=61) reported CAS and multiple sexual partners and/or an HIV-positive primary partner, and 34% (n=32) reported CAS only.

## Reasons given for low self-perceived need for PrEP among MSM who recently refused PrEP

Three major themes emerged from qualitative data analysis for reasons associated with low self-perceived need for PrEP: *1) Low self-perceived risk for HIV acquisition; 2) Confidence in remaining HIV-negative; and 3) Confidence and engagement in behavioral prevention strategies*. In addition to their association with low self-perceived need for PrEP, these themes are closely related to each other. However, there are some important differences between them. For example: *Low self-perceived risk for HIV acquisition* was based on their own sexual behaviors and protective strategies as the reason for not needing PrEP. A related theme *Confidence and engagement in behavioral prevention strategies* was focused on how confident men feel about the effectiveness of their strategies in HIV prevention. Greater confidence in prevention strategy such as condom use may have lower self-perceived risk for HIV acquisition. A closely related theme *Confidence in remaining HIV-negative* was based on factors such as not having younger social circles and having remained HIV-negative for several years despite engaging in behaviors with higher risk of HIV acquisition. Similarly, the theme *asking partners about HIV status* exclusively referred to asking about the status of the partner before having sex, while *choosing partners carefully* referred to other partner criteria such as their sexual activity, number of partners and venues where they meet.

Next, we describe the qualitative themes that emerged from the in-depth interviews and focus group discussions, followed by the distinctions that were identified between those who had multiple partners or an HIV-positive partner (as well as CAS) versus those who reported CAS only (Table 3). Quotes illustrating the themes from qualitative findings are presented in Table 4.

### Low self-perceived risk for HIV acquisition

Low self-perceived risk for HIV acquisition was reported by one-third (n=31) of the sample as a reason for declining PrEP. MSM felt their low risk for HIV did not warrant taking daily oral PrEP. Factors that MSM used to describe their low chances of acquiring HIV included not having multiple sexual partners, not much sexual activity, and being currently in a monogamous/committed relationship. Some MSM weighed their self-perceived low risk for HIV vs the benefits and risks of PrEP and decided that PrEP was not worth it.

### Confidence in remaining HIV-negative

Over one-third (35%) of our sample reported a lack of need for PrEP for themselves given their reported confidence in remaining HIV-negative. Primary reasons for their confidence included getting older and more mature, not worrying about HIV, continuing safe behavioral practices, and having stayed negative through younger years despite engaging in behaviors that elevated their chances of getting HIV (Table 3).

### Confidence and engagement in behavioral prevention strategies

Another important reason for lower self-perceived need for PrEP among MSM who refused PrEP was their confidence and engagement in behavioral HIV prevention strategies including: 1) Using condoms; 2) Limiting number of sex partners and choosing partners carefully; 3) Asking sexual partners about their HIV status; 4) Engaging in safe sexual

positions and oral sex; 5) Being monogamous or exclusive with one partner; and 6) Regularly getting HIV tests.

**Using condoms—**A vast majority of the participants (81%) reported condom use as a strategy for HIV prevention and reported having confidence in condom use. Men reported using condoms (exclusively and in combination with other behavioral prevention strategies) sufficiently protected them from HIV acquisition and lowered their need of PrEP use.

**Limiting the number of partners or choosing partners carefully—**Almost half (48%) of the participants described taking time to talk, getting to know the partner, and dating before engaging in sexual intercourse as a protective strategy. Furthermore, men reported limiting the number of sexual partners as a strategy for HIV prevention. Participants indicated they felt that these strategies would reduce their chances of getting HIV infection, so they do not need PrEP for HIV prevention.

**Asking partners about HIV status—**Another HV prevention strategy that participants (n=42) reported was asking the HIV status of potential sexual partners before having sex. Many men indicated that they would only have sex if the potential partner said they were HIV-negative, to reduce the chances of HIV acquisition. However, some men also indicated that they do not always have the conversation about HIV status of the partner.

**Engaging in safer sexual positions—**To reduce the chances of HIV acquisition, more than a quarter (28%) of the participants reported in engaging in safer sexual positions, particularly oral sex or insertive anal sex. Men described the beliefs that taking the role of an insertive partner or engaging only in oral sex reduces the chance of HIV acquisition.

**Monogamy/Being exclusive with one partner—**Some participants (n=24) reported being monogamous as an HIV prevention strategy. They reported that having an exclusive partner who is negative (some also on PrEP) gives them peace of mind. Men also reported that if the relationship changes to non-monogamous, they would consider taking PrEP.

**Regular HIV testing—**A small proportion (18%) of MSM reported getting tested for HIV regularly. A few participants said they preferred getting tested with their partner, which was seen as a prevention strategy.

### Differences in self-perceived need by behavioral indications

Among MSM who reported CAS in the past 6 months, and multiple sexual partners and/or an HIV-positive primary partner in the past 3 months (vs MSM who reported CAS only), fewer endorsed *low self-perceived risk for HIV acquisition* (26% vs 47%, $\chi^2 = 4.025$, $p = 0.044$), *confidence in remaining HIV-negative* (23% vs 59%, $\chi^2 = 12.164$, $p < 0.001$), *engaging in safer sexual positions* (20% vs 44%, $\chi^2 = 6.041$, $p = 0.013$), and *monogamy/being exclusive with one partner* (16% vs 44%, $\chi^2 = 8.204$, $p = 0.004$) as themes explaining their reasons for PrEP refusal when offered by a healthcare provider (Table 3).

## Discussion

In this study of a sample of MSM who reported CAS in the past 6 months, we examined the role of low self-perceived need as a reason for recent refusal of daily oral PrEP when offered it by a healthcare provider. Major themes underlying low self-perceived need for PrEP included low self-perceived risk for HIV acquisition and confidence in remaining HIV-negative. Further, men reported their confidence and engagement in behavioral HIV prevention strategies (such as using condoms, limiting their number of partners or choosing partners carefully, asking partners about their HIV status, engaging in safer sexual positions or oral sex, monogamous partnering, and regular HIV testing) for their low self-perceived need for PrEP, was also an important theme. These findings add context to the decision-making of MSM who were recently offered PrEP by a healthcare provider but refused it. Participants described self-perceived need for PrEP as a cost-benefit calculation, similar to past research on condom use before PrEP was widely available [39]. Prior to the PrEP era, some men used condoms as an effective option for HIV prevention while others adopted alternative prevention strategies such as having sex with HIV-concordant partners, practicing insertive or receptive anal sex or selectively using condoms in certain positions based on a partner's HIV status, and monogamy [40, 41]. In the current era of PrEP, we found that for MSM who perceived their chances of HIV acquisition as generally low with greater confidence in using other prevention strategies, the advantages of using PrEP may not outweigh the perceived limitations (e.g., concerns about side effects, cost, inconvenience of taking a daily pill). Self-perceived need for PrEP is a dynamic factor that can change based on number and type of partners, related sexual behaviors, and other contextual circumstances [21, 23, 33, 42]. Importantly, self-perceived need for PrEP may be modified through patient-provider discussions over time about sexual health focusing on patient behavioral indications for and perceived benefits of using PrEP [22, 23, 43].

Our study findings are unique in that we focused on MSM with behavioral indications for PrEP who recently refused it when offered by a healthcare provider, which allowed us to qualitatively explore the relationship between self-perceived need for PrEP, self-perceived risk for HIV, personal risk perceptions, and decision-making about using PrEP. Similar to an earlier study [21], we found that low perceived risk for HIV acquisition among MSM was logically related to low self-perceived need of PrEP, and consequently refusal of PrEP when offered by a provider. Further, we found a discordance between personal risk assessment and behavioral indications among some MSM in our study [23, 24, 29, 44]. The findings highlight a nuanced difference between having general awareness of PrEP and a lower degree of knowledge specific to the need of PrEP and personal risk assessment. For example, several participants who reported CAS and multiple sex partners described PrEP as appropriate for MSM who have many sexual partners or "too much sex", and for young and single men, yet still felt that they did not need PrEP.

Key findings from our study are the significant differences in reasons for PrEP refusal between MSM based on the different behavioral indications. As might be expected, the direction was the same (reported more frequently by participants reporting CAS only) for most (7 out of 8) of the qualitative themes, whether the difference was statistically significant or not. Compared to MSM with multiple behavioral indications (reported CAS,

and multiple sex partners and/or having an HIV-positive partner), MSM with only one behavioral indication (reporting CAS only) were significantly more aware to report lower perceived risk for HIV acquisition, and to report confidence about remaining HIV-negative, using safer sexual positions, and being monogamous. We previously found that MSM with indications for PrEP recognized their higher risk for HIV acquisition compared to MSM who did not report indications for PrEP [15]. Our current study finds a positive association between having multiple behavioral indications (reported CAS, and multiple sex partners and/or having a HIV-positive partner) and self-perceived need for PrEP, which was possibly mediated by perceived risk for HIV. This finding could inform patient-provider discussions and messaging efforts to focus on positive aspects of PrEP to increase PrEP uptake. On the other hand, MSM who reported only CAS described significantly lower perceived risk for HIV acquisition and higher levels of confidence in other prevention strategies among their reasons for PrEP refusal. For HIV-negative men in a monogamous relationship with an HIV-negative primary partner, low self-perceived need may be accurate and appropriate due to their lower behavioral risk for HIV acquisition. However, it may be beneficial for clinicians and counselors who recommend PrEP to help men continue to assess their current risk and discuss the benefits of PrEP use over time [24, 44].

Our findings have important implications for PrEP implementation – and perhaps HIV prevention in general - among MSM. As participants in our study are a particularly informative group (i.e., MSM with behavioral indications, knowledge, and access to healthcare provider), our findings present insights into their decision-making for PrEP uptake that provide an opportunity to intervene at a crucial point in the HIV prevention cycle of care [45, 46]. Incorporating elements of prevention motivation and emphasizing positive aspects of PrEP could tip the balance in favor of uptake in clients' cost-benefit calculations. A recent study focused on MSM who refused PrEP at baseline and subsequently initiated PrEP suggested that offering PrEP by revisiting the initial reasons for refusal and discussing additional benefits of PrEP could increase uptake [33]. In another study, MSM with indications for PrEP and low self-perceived need were offered a brief motivational intervention followed by a telephone booster session. Compared to care as usual (only offering PrEP), MSM who received the motivational intervention were more likely to further discuss PrEP, attend prescriber appointments, and importantly receive and accept a PrEP prescription [47].

## Limitations

Our study had several limitations. First, the sample was composed of participants who were recruited from community-based organizations in three metropolitan areas in the US. Although having 68% Black MSM in the sample is a strength of our study, there may be limitations in generalizability of the study results to other racial and ethnic minority groups. The results have limited generalizability to MSM of other race/ethnic groups. Third, responses from the men in the in-depth interviews and focus group discussions could be biased due to social desirability concerns, which may affect the study findings. Fourth, participants' responses to the sexual behaviors in the past time-period (3 and 6 months) may be affected by recall bias. Finally, we have not explored any differences in self-perceived

need and other themes identified as the reasons for PrEP refusal by race and ethnicity in this study.

## Conclusion

In this mixed-method study of HIV-negative MSM who could benefit from daily oral PrEP, self-perceived need for PrEP, low perceived risk of HIV acquisition and confidence in other prevention strategies may overshadow perceived benefits of oral prophylaxis for HIV prevention in their decision to refuse PrEP from a provider. These reasons were more pronounced among MSM with one behavioral indication compared to MSM with multiple behavioral indications, which may be appropriate due to lower risk for HIV acquisition associated with their sexual behaviors. For MSM with multiple behavioral indications, providers and prevention specialists should continue to highlight the positive aspects of PrEP and discuss with clients their sexual risk behaviors over time, in the context of the benefits of PrEP for preventing HIV infection.

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### CDC Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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**Table 1.**

Questions from the in-depth interviews and focus-group discussions assessed in the qualitative analysis

| | |
|---|---|
| **Questions from in-depth interviews** | |
| 1) | Why do you feel PrEP wasn't right for you? Or why did you refuse or decline their offer? |
| 2) | How did you feel about reasons given to take PrEP? |
| 3) | How concerned are you about getting HIV?<br>a) Why are you, or are you not, concerned? |
| 4) | Tell me how you protect yourself from HIV? |
| 5) | How confident are you that you will remain HIV negative? |
| **Questions from focus groups discussions** | |
| 1) | What is your gut feeling about PrEP?<br>a. What are some positives and some negatives about PrEP?<br>b. Why is PrEP not right for you? |
| 2) | How concerned are you all about getting HIV?<br>a. Why are you, or are you not concerned? |
| 3) | How do you protect yourselves from HIV? |
| 4) | How confident are you that you will remain HIV negative? a. Confidence in short term? Long term? |

**Table 2.**

Demographic and behavioral characteristics of MSM who recently refused daily oral PrEP offered by a healthcare provider, Atlanta, Georgia, Chicago, Illinois, and Raleigh-Durham, North Carolina, US, 2019

| Characteristic | Total = 93 n (%) |
|---|---|
| Multiple sex partners in past 3 months | |
| Yes | 58 (62) |
| No | 35 (38) |
| Primary male partner in past 3 months | |
| Yes | 60 (65) |
| No | 33 (35) |
| Primary male partner HIV status | |
| Positive | 4 (7) |
| Negative | 48 (80) |
| Unknown | 8 (13) |
| No primary partner | 33 |
| Age group (years) | |
| 18-24 | 20 (22) |
| 25-34 | 46 (49) |
| 35-44 | 15 (16) |
| 45+ | 12 (13) |
| Race/Ethnicity | |
| Non-Hispanic Black/African American | 63 (68) |
| Non-Hispanic White | 20 (22) |
| Hispanic/Latino | 8 (9) |
| Multiracial | 2 (2) |
| Education Level | |
| <= High school diploma/GED | 24 (27) |
| Some post high school training | 40 (45) |
| >= 4-year college | 25 (28) |
| No response | 4 |
| Employment | |
| Full-time | 49 (54) |
| Part-time/Unemployed | 42 (46) |
| No response | 2 |
| Health Insurance (including Medicare/Medicaid) | |
| Insurance | 59 (66) |
| Uninsured | 30 (34) |
| No response | 4 |
| City/Metropolitan Statistical Area (MSA) | |
| Chicago | 35 (38) |
| Atlanta | 34 (37) |

| Characteristic | Total = 93 n (%) |
|---|---|
| Raleigh-Durham | 24 (26) |

**Table 3.**

Reasons for refusing PrEP by behavioral indications among MSM who reported recent CAS (past 6 months) in Atlanta, Georgia, Chicago, Illinois, and Raleigh-Durham, North Carolina, US, 2019

| Themes | Total | MSM who reported | | MSM who reported | | Chi-square test *P*-value |
|---|---|---|---|---|---|---|
| | N (%) | CAS in the past 6 months and >=2 sex partners and/or a primary partner with HIV | | CAS in past 6 months only | | value* |
| | | n = 61 n (%) | n = 32 n (%) | | | |
| – | | | | | | |
| Low self-perceived risk for HIV acquisition | 31 (33) | 16 (26) | | 15 (47) | 4.025 | 0.044 |
| Confidence in remaining HIV negative | 33 (35) | 14 (23) | | 19 (59) | 12.164 | < 0.001 |
| Confidence and engagement in behavioral prevention strategies | | | | | | |
| Using condoms | 76 (81) | 51 (84) | 25 (78) | | 0.422 | 0.515 |
| Limiting number of partners or choosing partners carefully | 45 (48) | 26 (43) | | 19 (59) | 2.358 | 0.124 |
| Asking partners about HIV status | 42 (45) | 24 (39) | 18 (56) | | 2.422 | 0.119 |
| Engaging in safer sexual positions | 26 (28) | 12 (20) | 14 (44) | | 6.041 | 0.013 |
| Monogamy/Being exclusive with one partner | 24 (26) | 10 (16) | | 14 (44) | 8.204 | 0.004 |
| Regular HIV testing | 17 (18) | 8 (13) | | 9 (28) | 3.165 | 0.075 |

*Chi-square tests to examine the differences in proportion of themes of PrEP refusal reasons between MSM who reported CAS, and multiple sex partners and/or a HIV positive partner vs MSM who reported CAS only, CAS – Condomless anal sex

**Table 4.**

Themes and illustrative quotes relating to reasons for PrEP refusal by behavioral indications among MSM who reported recent CAS (past 6 months) in Atlanta, Georgia, Chicago, Illinois, and Raleigh-Durham, North Carolina, US, 2019

| Theme | Illustrative Quotes |
|---|---|
| ***Low self-perceived risk for HIV acquisition*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"I don't think I need PrEP. Cause I don't have a lot of anal sex. And that's really it."* (31y, White, Chicago)<br>*"And I haven't really got on it no because I don't have as much sex so I don't feel like it's needed right now. You know, I'm getting old, girls, so I'm trying to settle down, too. So I can't really just be out here fucking like that. So I've been trying to, like, I don't really feel like it's needed for me right now. If I was more, if I was still promiscuous like I was when I first heard about it, yeah. But now it's like I'm kind of like slowing down, so I don't really feel like it's…"* (26y, Black, Atlanta)<br>*"I'm not at risk. I'm not sexually at risk for that, so me, I wouldn't – there's people that are and put themselves like that. So I wouldn't be that specific person. Not to say that I don't actually have sex with people without condoms, but we know and we look into it so I know who it is."* (30y, Black, Chicago)<br>**Reported CAS only:**<br>*"For me, I mean, I'm in a monogamous relationship and have been for two and a half years. And, you know, we get tested often, so I haven't seen the real need for a preventative."*<br>(22y, Hispanic/Latino, Chicago)<br>*"I'm in a relationship so I don't really feel the need to partake in it, but would if I wasn't."* (26y, Black, Chicago)<br>*"It just seems like it would be, it's just a lot at this point in time. You gotta try to take the pill every day and all that kind of stuff like that. And if I was sleeping around with different multiple partners and different people, then maybe that would be something for me."* (39y, Black, Raleigh Durham) |
| ***Confidence in remaining HIV negative*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"I think I'm pretty confident because part of me feels like if I haven't gotten by now, I'm not gonna get it 'cause what, that's 12, I'm 40 minus 28, years of not using anything to protect myself. So it's like, if I haven't gotten it by now, then I probably wouldn't – part of me feels like I won't get it."* (40y, White, Chicago)<br>*"The thing that helps out with me is that – oh, I'm 35. So I don't go for younger frat party guys, though. I go for much more mature guys, though, basically. And that helps me out, basically. it's less than those party atmosphere, like, people in their early to, like, late 20s though."* (35y, White, Chicago)<br>*"No, seriously. I just do a lot of praying and soul-searching. I just, I just don't think about it. If you're not thinking – I feel like people who get HIV or whatever, are people who are over-paranoid about it, like just constantly thinking about it.*<br>*Have you all ever heard the saying, like, you are what you think? Or you think what you become? And so if you're sitting around constantly like being paranoid about catching HIV, like, you're probably going to catch HIV. So I'm not just gonna dwell. I'm not gonna live with that consuming my thoughts and my feelings. I'm gonna live my life."* (34y, Black, Raleigh Durham)<br>**Reported CAS only:**<br>*"I'm pretty confident. I managed to for these 20 years of activity, a lot of risky activity in my past. I know, a lot of it has to do with luck. Luck's probably the only reason why I'm negative still from earlier behaviors because it only takes one time. I had a lot of risky activity."* (43y, White, Atlanta)<br>*"I'm highly confident as long as I keep doing what I've been doing and trusting the people and make sure I'm trusting the people that I'm involved with."* (30y, Black, Atlanta)<br>*"I mean, I'm just gonna – I feel like I'm gonna continue – I mean, the way that I've been doing it thus far, you know, has basically, has helped me get this far. And I just have to, just continue to be safe and to be cautious the best that I can and to use my better judgment when it comes to things like that So I really can't say because, you know, you can't say what you want and what you can't."* (39y, Black, Raleigh Durham) |
| ***Confidence and engagement in behavioral prevention strategies*** | |
| ***Using condoms*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"And with condoms, of course, having a partner use condom – just being careful of what you do and who you do it with."* (52y, Black, Raleigh Durham)<br>*"I use condoms. I make sure my partner does take his PrEP medication. And I just don't do risky things during sex that may cause like rips and tears, because that's what I be nervous about."* (26y, Hispanic/Latino, Chicago)<br>*"About 85 [percent of the time, using condoms] depending on the night, depending on, like, and I think it goes back to, you know, if you're out and you're really feeling this person and you guys are really vibing or whatever; you guys are talking; you guys go back home and you guys – it's just you'll know before you engage if is it worth it? Is it not worth it?"* (33y, Black, Chicago)<br>**Reported CAS only:**<br>*"Condoms and limited my sexual partners (to protect myself from HIV)"* (23y, Black, Atlanta)<br>*"It depends. If it's like a new sex partner, yeah, we might use condoms. If it's somebody that I know, 'cuz I only, actually, that doesn't even justify it. (chuckles). Well, what I was gonna say was, I only have unprotected sex with people that I, I've known, and I know their status."* (28y, Black, Atlanta) |

| Theme | Illustrative Quotes |
|---|---|
| | *"We may just pop on a condom, you know, but not really. But the whole thing is, I don't sleep with multiple people. it's just one person…When I wasn't in a relationship, I used condoms."* (39y, Black, Atlanta) |
| ***Choosing partners carefully or limiting the number of partners*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*[Ask the partner, like, "What's your status?" or something like that.] "That also, or like, how many partners did they have in the recent past? So like, that's one of 'em. [Okay, so is that something that – do you usually have a conversation with partners about…?] Yeah, cause it's like I want to know how many people you interact with, so yeah."* (22y, Black, Chicago)<br>*"Usually, you know, they're friends. They're people. They're not necessarily strangers, and even if they are, they're generally around clubs where, you know, HIV is tested for, so. I select partners by dating. I know that's really hard in these times, but it's worth it to date someone and actually get to know them, versus just being out there. Dating is very hard, but I'll bet catching HIV and not knowing who gave it to you is harder."*<br>(26y, Black, Atlanta)<br>*"Research, I call my friend. He call that person.*<br>*He'll call – and I like to see who this person was in a circle with before they come over to me. So I do my research."*<br>(33y, Black, Raleigh Durham)<br>**Reported CAS only:**<br>*"Yeah, limit the number of people you're sleeping with the best you can." (29y, Black, Atlanta)* |
| ***Asking partners about HIV status*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"Yeah, beforehand (have conversations about HIV with sex partners). it's just like, well, I ask them like their backstory. Are you positive/negative?*<br>*And go from there."* (26y, Black, Chicago)<br>*"It might just come up. Like I meet a lot of people on dating apps, so it come up, "What's your HIV status?" Negative, negative. Okay. And that's it.*<br>*Or a person might say, "I want you to know that I am HIV positive." I'm like, "Okay. You know? That doesn't mean that…" Still, I don't look at a person like I don't want to be your friend. Now, we wouldn't have sex."* (42y, Black, Atlanta)<br>**Reported CAS only:**<br>*"You know, talk about like, well, obviously we're gonna talk about like…I have no problem with asking you your status before we even get to that, so I mean, a lot of people do, but I don't have a problem asking someone their status. I'll be real.*<br>*I'll ask about maybe about 70-75% of the time.*<br>*You know every time it's not a conversation that's gonna happen at all. So, about 70%, those times*<br>*I'm not having those conversations are probably those times I'm doing something that won't lead to catching HIV."* (28y, Black, Chicago) |
| ***Engaging in safer sexual positions or non-penetrative sex*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"I was top and so I'm aware that topping, you're less, least likely to be infected, so yeah. So I guess that's one way of prevention. Yeah, for sure."*<br>(26y, Black, Chicago)<br>*"I mean, if it's someone that I'm just meeting or someone new that I'm dealing with, I'm not going to engage in anal sex initially. You know, just oral or foreplay or whatever, but yeah, that's not an initial go-to for me until I get to know you a little bit better, so."* (29y, Hispanic/Latino, Chicago)<br>*"Another thing is that I wasn't, like, super sexually active for a while and a lot of my sexual encounters just – it's kind of graphic but… Okay, a lot of my sexual encounters just involved me receiving oral sex and I felt like PrEP wasn't necessary for that. Like, if I was doing a lot of anal sex I feel like, especially bottoming, I feel like that's when you definitely need to be on it. But me, the vast majority of my sexual encounters are just me receiving oral sex. And I felt in that situation, I don't really need to be taking HIV prevention pills. I feel like that's a very slim chance of me getting HIV from that specific sexual encounter."* (31y, White, Chicago)<br>Reported CAS only:<br>*"Honestly, when I'm having, I would say sex with men-wise, I try to be a top because being the receiver in my eyes, it means you could get anything. In my opinion, it makes a lot of big difference."* (26y, White, Raleigh Durham)<br>*"Oral is a great way to stop from catching a lot of things. HIV is one of those."* (28y, Black, Chicago) |
| ***Monogamous/ Exclusive with one partner*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"Yeah. I'm seeing someone currently, so, we're mostly monogamous. As far as how I'm protecting myself. I don't use condoms. Just straight up. I will just go ahead and disclose that. So, you know, I know that that's unwise, but I feel comfortable now that I'm seeing someone, and it's, you know. Yes. And he is on PrEP. So, because of that, I feel that my risk factors are a lot lower. The fact that he's on it."* (30y, White, Raleigh Durham)<br>**Reported CAS only:**<br>*"Just because my partner and I have been together for a long time. We're engaged. Neither one of us are outside of our relationship. You know, we don't have multiple partners or, and at this point, we've both been tested, since we've been together, multiple times. We know the other one's negative, and so it's just kind of like not an issue in my mind. That's honestly probably the only reason. If I was, say to, if my relationship was to end, that'd probably be one of the first things*<br>*I'd do. Just because I know me. (chuckles) Drink too much sometimes, and don't make the smartest decisions, when I was single."* (34y, White, Raleigh Durham) |
| ***Regular HIV testing*** | **Reported CAS, and multiple sex partners and/or a HIV positive partner:**<br>*"Well, then okay, the general way is I go in, I get tested from my primary care physician. Then I show up to the club. If, you know, everything goes well, I find somebody. They find me. You know, "hey, just out of curiosity, are you negative or positive?" Generally speaking, it's negative… I say, "Hey, you can get onsite testing and then we don't have to really worry about that." Of course, I give them my status as well. Then we go from there."* (38y, White, Chicago) |

| Theme | Illustrative Quotes |
|---|---|
| | *"Goin' to the doctor with my sex partner, because it's not only just you doin' it, you gotta make sure your partner doin' it too. Because if you being safe, and they're out there doin' it, they could still could bring it back, so. That's why we make sure we go get tested together."* (26y, Black, Chicago) |