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ORIGINAL PAPER

Missed Prevention Opportunities: Why Young, Black MSM with Recent HIV Diagnosis did not Access HIV Pre-exposure Prophylaxis Services

Latesha Elopre[1] · Corilyn Ott[2] · Crystal Chapman Lambert[2] · K. Rivet Amico[3] · P. S. Sullivan[4] · J. Marrazzo[1] · Michael J. Mugavero[1] · Janet M. Turan[5]

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Abstract

In the United States, HIV infection rate inequities persist, with new infections highest among young, Black men who have sex with men (YBMSM) in the South. We conducted 23 in-depth interviews with YBMSM newly diagnosed with HIV to explore awareness of and barriers to uptake of HIV pre-exposure prophylaxis (PrEP). Participants were recruited from two university-based HIV Clinics in Alabama and were: (1) 16–29 years of age, (2) diagnosed with HIV within the prior 365 days, (3) Black race, (4) self-identified as a cis-gender male reporting sex with men AND (5) did not report prior PrEP use. Interview guides were grounded in Anderson's Behavioral Healthcare Utilization Model (ABM), with embedded constructs from the situated Information, Motivation and Behavioral Skills theoretical framework. Coding was conducted by three independent coders using thematic analysis methods. Participants (N = 23) median age was 24, more than two-thirds reported annual incomes less than $15,000 and the majority (84%) identified as gay. Major themes that emerged as barriers to accessing PrEP included low prioritization and interests in using PrEP; low perceived HIV risk due to feelings of invincibility and trust in sex partners; lack of information about accessing PrEP; negative beliefs around PrEP; and the suggestion to change PrEP messaging from only targeting YBMSM. These findings indicate that there are important missed opportunities for HIV prevention with PrEP among YBMSM in the South. In these high-risk young men, tailored interventions are needed to better inform and frame perceptions around risk, knowledge, access and prioritization of PrEP.

Keywords Young · Black men who have sex with men · PrEP · Barriers

Abstracto

En Estados Unidos, desigualdades en la tasa de infección por VIH persisten, y en el sur del pais, la tasa de nuevas infecciones hombres jóvenes Afro-americanos que tienen sexo con hombres son más altas. Realizamos veintitrés entrevistas

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✉ Latesha Elopre
lelopre@uabmc.edu

[1] Department of Medicine, University of Alabama at Birmingham, 845 19th Street South, BBRB 206, Birmingham, AL 35205, USA

[2] University of Alabama School of Nursing, Birmingham, USA

[3] University of Michigan School of Public Health, Ann Arbor, USA

[4] Emory University Rollins School of Public Health, Atlanta, USA

[5] University of Alabama at Birmingham School of Public Health, Birmingham, USA

en profundidad con YBMSM recién diagnosticado con VIH para explorar la conciencia y las barreras para la adopción de la profilaxis previa a la exposición al VIH (PrEP). Los participantes fueron reclutados de dos clínicas de VIH en centros medicos academicos en el estado de Alabama con los siguientes criterios: 1) 16-29 años de edad, 2) diagnostico VIH dentro de los 365 días, 3) raza afro-americana, 4) autoidentificados como un género cis-hombres que tienen sexo con hombres, y 5) no informaron el uso previo de PrEP. Las guías de la entrevista se basaron en el Modelo conductual de utilización de la salud (ABM) de Anderson, con construcciones integradas del marco teórico de Información, motivación y habilidades conductuales. Tres codificadores independientes codificaron utilizando métodos de análisis temáticos. La edad mediana de los participantes (N = 23) era de 24 años, más de dos tercios informaron ingresos anuales de menos de $15,000 (USD) y la mayoría (84%) se identificó como gay. Los temas principales que surgieron como barreras para acceder a PrEP incluyeron una baja priorización e interes en su; bajo riesgo percibido de VIH debido a sentimientos de invencibilidad y confianza en las parejas sexuales; falta de información sobre el acceso a PrEP; creencias negativas sobre PrEP; y la sugerencia de enfocar los mensajes sobre PreP no solo ha jovenes afro-americanos que tienen sexo con hombres. Estos hallazgos indican que hay importantes oportunidades perdidas para la prevención del VIH con PrEP entre esto jovenes en el Sur de EEUU. En estos hombres jóvenes de alto riesgo, se necesitan intervenciones personalizadas para mejor informar y enmarcar las percepciones sobre el riesgo, el conocimiento, el acceso y la priorización de PrEP.

Introduction

The current face of the United States (U.S.) HIV epidemic is dominated by racial and sexual minority groups living in the South [1–4]. Black Americans, who constitute 13% of the U.S. population, account for 43% of new HIV diagnoses [5–8]. Specifically, most new infections occur among men who have sex with men (MSM), with well over half being young, Black men who have sex with men (YBMSM) [9]. The South accounts for 38% of the US population, but over 50% of new HIV diagnoses in 2017 [10]. In response to these inequities, federal agencies are working in a coordinated manner to End the HIV Epidemic (EtHE), with a mandate to focus on disparity populations and geographic hotspots, with notable emphasis in urban and rural locales in the South [11]. One strategic pillar of this effort is utilization of highly effective biomedical prevention tools like HIV pre-exposure prophylaxis (PrEP). With consistent adherence to PrEP, the risk of acquiring HIV can be decreased by up to 95% among MSM [12, 13]. Evidence suggests that in areas of high PrEP uptake, new cases of HIV are significantly reduced, even when controlling for viral suppression [14]. However, in the South, where the need for PrEP is the greatest, PrEP utilization is the lowest compared to other U.S. regions [15, 16]. Moreover, Black MSM in the U.S. are six times less likely to receive PrEP compared to their White counterparts [17–19].

To effectively reduce HIV rates, higher PrEP uptake among those at elevated risk for HIV is urgently needed, especially in the South [20, 21]. Alabama (AL), which has been identified as a geographic area of focus for EtHE, has more than 11,000 individuals with a PrEP indication, most of whom are BMSM. Despite PrEP being offered in clinical settings in Alabama for over five years, there has been low PrEP uptake as well as PrEP to need ratio (ratio of the number of PrEP users to the number of people newly diagnosed with HIV), particularly among YBMSM [16, 22, 23]. Prior studies have worked to understand potential facilitators and barriers to PrEP uptake among YBMSM in effort to develop effective interventions. One such study conducted by our research team among YBMSM not living with HIV found that intersectional stigma related to multiple identities was a major barrier to utilization of HIV prevention services [24]. Although most participants reported willingness to use PrEP, few felt that they needed PrEP urgently due to low perceived risk [24].

YBMSM newly diagnosed with HIV, living in the South, who did not use PrEP despite its availability in their geographic area represent a unique, distinct group that could have most benefited from PrEP. To better understand the factors that prevented PrEP uptake and use, we conducted interviews with YBMSM recently diagnosed with HIV to ascertain their awareness of PrEP and, if aware, their reasons for nonuse, as well as gain insights from participants about how to increase uptake of PrEP in the South among those who could have benefited the most. In-depth interview (IDI) guides, informed by a conceptual framework including constructs from the Andersen-Newman Behavioral Model of Health Service Utilization (ANM) as well as the situated Information, Motivation and Behavioral Skills (sIMB) Framework, were used to conduct IDIs with 23 YBMSM living in Alabama, recently diagnosed with HIV [25, 26]. The purpose of this study was to better understand steps necessary for intervention development to increase uptake of PrEP among a group who would optimally have been engaged in PrEP services prior to HIV acquisition. To our knowledge, no other such qualitative study has been conducted with this population to understand barriers to PrEP utilization.

Methods

Study Design

We conducted a phenomenological, qualitative study grounded in a conceptual framework including the ANM conceptual framework with sIMB constructs incorporated into its health behavior domain [27, 28] (Fig. 1). Specifically, we focused on individual and interpersonal barriers to PrEP utilization within the context of the social–structural realities in which PrEP would have to be navigated, with subsequent environmental–structural analysis to be conducted as a separate component of this research study. This framework included predisposing characteristics, defined as characteristics not related to the health behavior of using PrEP, as well as "enabling" factors that influenced lack of PrEP uptake and perceived need of PrEP among our participants prior to their HIV diagnosis. By incorporating sIMB constructs, we also evaluated core information (health behavior), motivation (personal and social attitudes and beliefs about health behavior) and behavioral skills (objective and perceived skills, including self-efficacy in implementing health behaviors) perceived necessary to initiate health behaviors around PrEP uptake in the situated context of one's lived experiences, resources, and challenges. Semi-structured interview guides as well as study protocols were reviewed by BMSM working at local AIDS Service Organizations in Alabama to ensure that questions were relevant and culturally humble (Fig. 2). Specifically, the first author met with BMSM employed by AIDS Alabama in an iterative process, to review interview guide questions developed by the researchers to map onto to our conceptual framework and attain feedback on cultural appropriateness of questions, as well as content, until a final guide was created that these stakeholders felt adequately represented topics that would illicit a better understanding of barriers to PrEP care among YBMSM. Written informed consent was obtained from participants prior to each interview and the University of Alabama at Birmingham (UAB) Institutional Review Board approved all study procedures.

Study Participants and Sample

Twenty-three participants were recruited from two Ryan White Clinics in the Birmingham/Hoover metropolitan service area. Participants were: (1) 16–29 years of age, (2) diagnosed with HIV within the prior 365 days, (3) Black race, (4) self-identified as a cis-gender male reporting sex with men AND (5) did not report prior use of PrEP. Recruitment occurred through direct referral from care providers and flyers placed in each HIV clinic. All participants' electronic medical records were screened prior to enrollment to ensure they were diagnosed with HIV in the past year.

Procedures

Participant sociodemographic characteristics were collected electronically through self-administered surveys prior to interviews with the following characteristics collected: age,

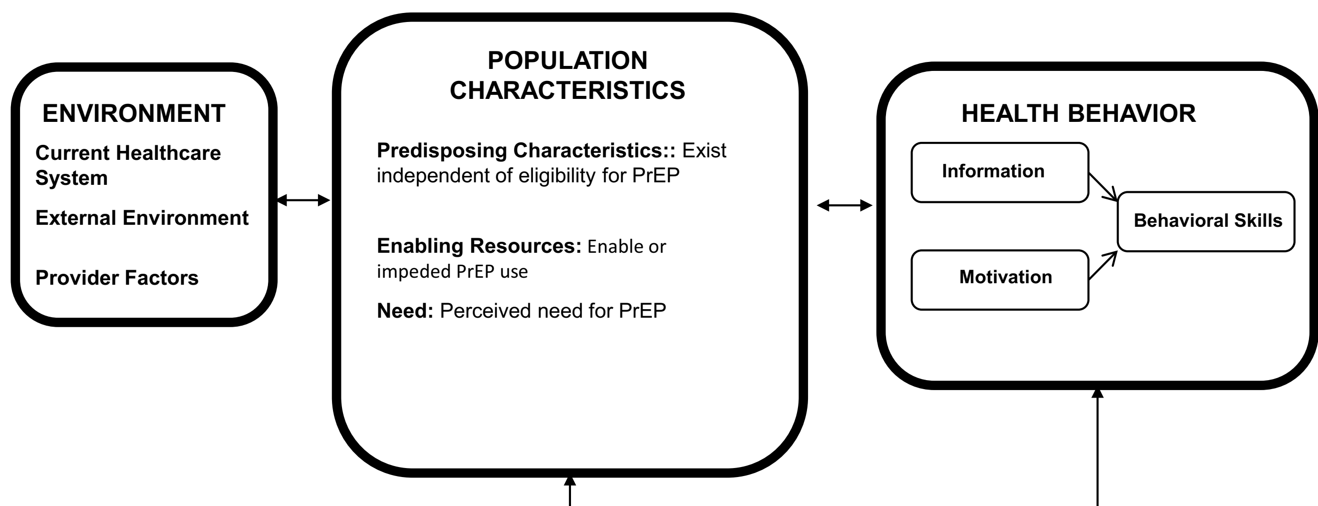

Fig. 1 Conceptual model: grounded in ABM. Conceptual model adapted from Andersen Health Care Utilization Model (ABM), incorporating constructs from situated, Information, Motivation, Behavioral Skills model (sIMB). Items in boxes are constructs of ABM and sIMB, with arrows relating their interactions

Fig. 2 Constructs for in-depth interviews and example questions from ABM[a] and sIMB[b] conceptual models

Conceptual construct	Example Questions
Predisposing Characteristics[a]: Demographic characteristics Knowledge Social Structure Health Beliefs	• Before your diagnosis, what did you know about HIV? • What did you do, if anything, to prevent HIV or other sexually transmitted diseases? • How often were you tested for HIV? STIs?
Enabling Resources[a]: Community and personal resources	• *How did/does your family feel about people with HIV?* *Friends?* *Church?* • Where do you hear about health information?
Need: Perceived Needs[a]	• Before your diagnosis, how worried were you about getting HIV? • In the past, did you feel that you had control over contracting HIV?
Health Behavior[b]: Information around the health behavior Motivations to adopt the health behavior Beliefs around the health behavior	• Had you heard about PrEP before your HIV diagnosis? • How did you feel about PrEP? • Have you heard any conversations about PrEP? Please Describe. • If you had the opportunity to get PrEP, where would you have felt comfortable receiving it? • Could you talk to me about what could make it hard for black men to access PrEP? • What do you feel is the best way to get black men hearing about and considering taking PrEP?

highest level of education, employment, annual income, insurance status, sex assigned at birth, and gender identity. Participants who met inclusion criteria were contacted by study staff to coordinate a time and location to conduct IDIs. Two Black cis-gender women were selected to conduct interviews based on feedback from key stakeholders regarding desired characteristics of interviewers that would place participants at greatest ease when answering questions. Interviewers received training from investigators on topics related to current HIV epidemiology, prevention tools and cultural humility with mock interview sessions prior to conducting study participant interviews. Interviews were conducted in private rooms and scheduled based on participant availability. Each participant received $50 remuneration after completion of a brief demographic survey and the interview.

Data Processing and Analysis

Digitally encrypted audio recordings of interviews were transcribed by a professional transcription service, checked for accuracy and coded using NVivo software version 11 (QSR International). Three coders (C.M., C.O., L.E.) iteratively analyzed and deductively coded the data based on the ANM framework as well as themes that naturally emerged. This was followed by one coder (C.O.) reviewing all descriptive codes and definitions to create an analytic report with common themes (major views) and sub-themes or minority views (only mentioned by 1–2 participants). This report was reviewed by study investigators and all coders, and ambiguous or subjective themes were discussed and re-categorized based on agreed upon themes using an iterative process. Relevant quotes were reviewed and selected from each major theme to best represent each topic that emerged. Following coding, major themes with associated codes were presented to approximately 15 BMSM living in Alabama, not participating in the study, who worked within local community-based organizations (CBOs) to evaluate whether themes resonated with their lived experiences. We incorporated their feedback into selecting major themes from the coded transcripts.

Results

All 23 participants were Black cis-gender men who reported having had sex with other men. Participant ages ranged from 18 to 29 years with a median age of 24 years. Self-descriptions of sexual identity varied, with the majority of participants (84%) reporting being gay/MSM/or same-gender loving. Only 52% of participants reported currently having private health insurance at the time of the interview. More than two-thirds (71%) reported having an annual income ranging from 0 to $14,999. The overwhelming majority (78%) reported being aware of PrEP prior to diagnosis, but only eight of participants reported that they would have been willing to take PrEP prior to their diagnosis. (Table 1).

Common Emerging Themes

Five major themes emerged about barriers to PrEP utilization prior to HIV diagnosis and ways to increase uptake among other YBMSM in the future. While these themes do not exactly map to all individual constructs within our theoretical framework because coding was collated across constructs, major themes nicely mapped onto several key ANM and sIMB constructs related to perceived PrEP need as well as the necessary information, motivation and behavioral skills needed around PrEP. (Table 2 presents major themes related to mapped constructs) All major themes were representative of the lived experiences of our participants and corroborated by Black MSM working in local CBOs, providing face validity to study findings. These major themes included: (1) low prioritization and interest in using PrEP, (2) low perceived HIV risk, (3) lack of adequate information about PrEP, especially how to access and insurance coverage, (4) negative multifactorial beliefs about PrEP (freq) and (5) the need to change messaging around who has an indication for PrEP.

Table 1 Characteristics of study population

Characteristics	Total = 23
Median age	24 (18–29)
Education[a]	
High school or equivalent	10 (48%)
Some college	9 (43%)
Bachelor's degree	2 (9%)
Employed	
Yes	14 (61%)
No	9 (39%)
Annual income from 0 to $4999[a]	
0 to $14,999	15 (71%)
$15,000 to $29,999	3 (14%)
$30,000 to $59,999	3 (14%)
Insured	
Yes	12 (52%)
No	11 (48%)
Self-described sexual identity	
Gay/MSM/Same gender loving	19 (84%)
Bisexual	3 (16%)
PrEP awareness prior to diagnosis	
Yes	18 (78%)
No	5 (22%)
Would have been willing to take PrEP prior to your diagnosis?	
Yes	8 (36%)
No	15 (64%)

[a]Frequency missing = 2

Table 2 Major study themes, mapped to select constructs within conceptual framework

Major themes	Constructs
Low prioritization and interests in using PrEP	Perceived need Motivation
Low perceived HIV risk	Perceived need
Lack of information about PrEP, coverage and access	Information Environment
Negative beliefs about PrEP	Enabling resources Motivation Behavioral Skills
Need to change messaging around PrEP	Information Enabling resources Motivation

Low Prioritization and Interests in Using PrEP

Many YBMSM expressed that PrEP was not prioritized in their lives, often due to competing demands around financial security, housing stability and insurance coverage.

> And another thing, some people just have very different financial priorities. Sometimes your bills just skyrocket. You don't have enough money left over to pay insurance or leftover to pay this so I would say it's a factor of both. (001).

Other participants did not specify that other life stressors were prioritized over PrEP, but felt, overall, most YBMSM do not think PrEP is important in their day-to-day life. Initiating PrEP is not at the forefront of their minds.

> And I think some people are still, you know, in the same mindset like I had, you know, "It's not that important," "Maybe I'll start taking it next month. I'll wait until then." (014)

> then you just have people that don't care…They can know about PrEP. PrEP can be a dollar. They're not going to get any PrEP because they don't want to do it. They don't see the benefit. They don't see it as being beneficial. (002)
> I just feel like they just do not care. I am not trying to talk bad about them or anything. It does not matter. These days I feel like they just – (don't care about) PrEP, protecting themselves and other people. (016)

Low Perceived HIV Risk

Many participants expressed having low prioritization of PrEP, because they ultimately considered themselves at low perceived risk for acquiring HIV prior to their diagnosis. Participants gave many reasons for believing they were at low risk and this usually pertained to feelings of invincibility related to their youth.

Invincibility

> I felt like I was—if I did what I was supposed to do as far as protecting myself…then I would not get it, and I thought I was like superman and untouchable. (005)
> I don't know how to explain it. It's just a thing where nothing can happen to you. At a young age, people feel that way. (013)
> And, then just like, I guess, pride. You don't want to be that person to, I guess, look into it, because you always feel like you're invincible. It happens to everybody else, but it doesn't to you. (011)

Some also expressed feeling they were at low risk for HIV, because they were with a trusted partner at the time of their diagnosis.

Trusted Sex Partners

> I mean because I was only with one person and I didn't think they was messing around on me so that's how it happened to me. (004)
> I had that level of trust and the certain people that I wasn't protected with. So, it just kinda, sort of happened and at the time because I had so much trust, I wasn't really worried about getting transmitted to me so… Yeah it just kinda happened that way. (012)

Lack of Information About PrEP, Coverage and Access

While most participants were generally aware of PrEP, they felt there was a lack of specific knowledge in the community around PrEP and more so how to access PrEP. They mentioned being concerned about insurance coverage for this medication and also lacked having a primary care physician to discuss the medication with them in detail.

Lack of education about PrEP.

> They're not educated on what it does and what it prevents. (018)

Lack of communication in the community about PrEP.

> And I can only speak as a Black man. A lot of times in our community, we are too proud or we're not knowledgeable enough on something. And we feel as though if this person isn't doing it, then why do I have to do it? It's just something we just have to start talking about more regularly. It's just not something talked about enough. (015)

Limited knowledge on how to access PrEP.

> Just the education of how to get it. They know about it, they just don't know how to get it. (005)
> Well, I'll say this, not having a primary care physician or not having a doctor was one of the reasons because if you don't have a doctor to talk to it about or have a physician or anything to talk to about then how do you find out more about it. (015).

Limited knowledge about insurance coverage for adolescents.

> I didn't get on it sooner because I thought I had to have specific insurance and I was afraid to use my parents' insurance to cover it because I didn't know how to, to get the insurance coverage without my parents finding out that I was on it. (005).

Negative Beliefs About PrEP

The majority of participants felt that PrEP and those using it are negatively regarded by their family and friends. Some feared PrEP would be confused with medication to treat HIV, and thus connected with stigma and discrimination around HIV infection. Many also thought that perceptions of PrEP might be related to homonegativity in their communities and accessing PrEP would cause the unintentional consequence of outing BMSM who are not comfortable with their sexual identity, especially if currently in relationships with women.

HIV Stigma

> … they're going and snooping and trying to find different medications that the person is taking. And they find something anywhere closely related to HIV that the person automatically has HIV. (006)

> PREP is basically an HIV pill. That's all it is, basically. And more so, they see that pill they gonna feel like, oh, you got HIV. (007)
> I think most Black men don't want to be seen in areas where you would assume that they may have any form of condition like HIV. (018)

Homonegativity

> And, that's another tricky question, because it kind of goes back to African-American males do not want to be seen, especially if they are homosexual, bisexual or heterosexual, but don't want the world to know. It's really hard to get them to say, "Oh, well, we are going to have this information about PrEP," and get them to come. Because, if, there's a fear that they'll be seen, unless they are … open with their sexuality. (011).
> And I feel like that's what a lot of people think PrEP is for, is for gay men who have sex with men, when that's not the case. (015)

Unintentional disclosure of sexual identity

> …a lot of men have sex with men but they don't consider themselves to be gay.. I can't come to my wife and say, hey, I'm doing PrEP. She's going to ask why or that goes into a bunch of things, so honesty plays a factor and a part into it and it's just a whole lot that comes with it. (001)
> Masculinity is very common amongst the Black, gay community… and a lot of, like, Black gay men are tied to that and so actively seeking out PrEP seems like something to acknowledge this life style and life choice of having sex with other men… They're choosing to like have a wife or girlfriend and have sex with men. But like getting PrEP is an actual acknowledgement of that rather than some façade that it is created. (003).

Need to Change Messaging Around PrEP

When participants were asked specifically about how to increase PrEP uptake, they mentioned the need for ads that did not only focus on PrEP being for gay and bisexual Black men, in order to reach individuals who may not be comfortable with their sexuality. They also mentioned the benefits of having testimonials from people living with HIV or taking PrEP to speak to it's benefits.

Change the association of PrEP for only gay people

> Make it normal because that's the only way you're going to stop fear. (FG 2)
> So, it should be geared towards everybody and not target a certain audience because PrEP is not for gay men. It's for men and women of all sexual orientations. (015)
> Trying to get it across through media that it's more than just us who is being affected by this. So maybe we should take a different route and show some more ethnicities up here because if you just continually show us, it's going to put us down and it's not going to make us go see about it. (009)

Provide testimonials from HIV positive and Negative people

> For my friends who are negative, who want to start protecting themselves, again, getting people who are also positive and getting people who are also undetectable and also getting people who are actually taking PrEP and showing them. "Hey, this is what you can do to protect yourself." (009)

Discussion

The goal of this study was to evaluate barriers to uptake of PrEP among YBMSM newly diagnosed with HIV, a group who could have greatly benefitted from PrEP. Major themes, included: low interest and prioritization, low perceived HIV risk, lack of knowledge around PrEP and how to access it, negative beliefs about PrEP, and suggestions to change messaging around PrEP. This study is unique and timely, because it amplifies the voices of YBMSM who did not access PrEP while at risk for HIV and prior to being diagnosed with HIV during a time when PrEP was available. More importantly, as has been demonstrated in prior observational cohort studies, it highlights that structural barriers alone do not account for low uptake of PrEP among YBMSM living in the South and that social and cultural factors play a large part in preventing YBMSM from accessing this highly effective prevention tool [29].

The low prioritization and perceived HIV risks expressed by participants, prior to their diagnosis, support the need for PrEP messaging to change and potentially move away from risk framed educational content. Although the Centers for Disease Control and Prevention (CDC) PrEP Clinical Practice Guidelines recommend that clinicians consider HIV prevalence in the community when recommending PrEP to their patients, they do not address the lack of awareness among impoverished, Southern communities about their area-level HIV risks [30]. YBMSM in this study had low awareness of their HIV risks prior to diagnosis and gave several reasons for this perception, including being in a monogamous relationship or feeling that they were already using other HIV prevention strategies consistently to prevent infection. Some expressed that due to their age at the time of diagnosis, they felt "invincible" against infection while they were discovering their sexuality. Additionally, many participants reported feeling that there was time before they

needed to access PrEP as an HIV prevention tool and prioritized other instrumental needs, like stable housing. By focusing on protection as opposed to risks in PrEP messages (i.e. focusing on positive outcomes, in other words "gain-framing"), there is the potential for youth who do not consider themselves at risk to still access PrEP out of a desire to empower themselves in preventing HIV [31]. Revising messaging around PrEP to be more user-focused may effectively engage YBMSM like the ones in this study, whom were mostly aware of PrEP prior to diagnosis. More importantly, while recognizing the importance of gain-framed messaging, prioritization of PrEP utilization among YBMSM will also be heightened by addressing the structural barriers they face which require them to choose attaining basic needs over preventive health measures. Like many Southern states, Alabama has not expanded Medicaid and most of the participants in this study reported an annual income of less than $15,000 a year. As medical advancements continue in the field of HIV prevention, emphasis needs to focus on policy change in Southern communities who currently are in greatest need of effective HIV prevention strategies [32].

Study participants reported many negative beliefs about PrEP in their communities that created significant barriers to PrEP utilization. Although prior studies have highlighted PrEP-related stigma as a barrier to uptake due to perceived increased sexually activity with its use, these participants felt HIV-related stigma and homonegativity were major barriers to PrEP utilization, which some reflected on with a sad humor given their current HIV diagnosis [33]. These fears have been expressed by YBMSM not living with HIV in prior qualitative studies conducted in Alabama, who reported that taking PrEP may cause partners, friends and family members to think they were living with HIV [24]. HIV-related stigma as a barrier to PrEP utilization has been supported by other studies done in the Southern U.S. among MSM populations [34]. Fear of interpersonal relationships suffering due to misbeliefs around HIV diagnoses were accentuated by concerns about being "outed" in terms of sexual orientation through taking PrEP. It was voiced by some participants that PrEP was associated with being gay, which many did not feel comfortable disclosing at such a young age with varying degrees of acceptance of their sexual identity. Supporting this finding was the need to change initial study protocols to increase enrollment of YBMSM for in-depth interviews. BMSM key stakeholders working at AIDS Service Organizations felt that internalized homophobia among participants was the main reason study investigators initially had numerous failed attempts at conducing focus groups, per the initial study protocol, requiring a change in study procedures to in-depth interviews. Participants echoed the belief that internalized homophobia was not only very common among YBMSM living in the South, but intensified among YBMSM who have not yet identified themselves as being gay. Coming out as gay was felt to be problematic, given the need to be identified as masculine in Black communities and taking an HIV prevention drug like PrEP was a direct affront to this image. Black, gay men living in the South face multiple stigmas related to their identity and research supports that cultural factors may delay acceptance of sexual identity among Black youth [35].

Additionally, our findings support the need for PrEP messaging to not purely target Black MSM, because doing so may further stigmatize a highly vulnerable population not yet accepting their sexual identity. When asked for ways to improve PrEP uptake, participants suggested a change in the current messaging around PrEP. Study participants felt that YBMSM in Southern communities, where self-acceptance of sexual identity may be delayed, might be more inclined to access PrEP if messaging did not only feature racial and sexual minority groups. They particularly asked for messaging that included men and women portrayed in heterosexual relationships. Through targeted messaging focused on Black gay and bisexual men, difficulties may arise among YBMSM who are newly exploring their sexuality or still feel shame around their identity. One participant made the point that the only time you see Black gay men in commercials is when discussing HIV risk, which worsens the perceived and experienced stigma he already faces in his community. Concurrently, messaging and educational systems that foster support and acceptance of all sexual and gender minority groups in Southern Black communities is necessary to change social norms so that youths, like the ones in this study, no longer fear being seen in their social networks as gay or bisexual. These findings support the current need for more research on alternative formulations of PrEP that may be less stigmatizing by allowing more privacy than an oral-daily regimen [36]. Lastly, messaging around PrEP cannot end with the goal of only raising awareness, as most of our participants reported being aware prior to their diagnosis. This study suggests that YBMSM need specific knowledge about the steps necessary for them to access PrEP in their communities, as has been suggested in other research with current and potential PrEP users in similar settings [37]. Gaining knowledge around HIV prevention strategies at very young ages may improve prioritization in this population and abate feelings of invincibility. If policy does not permit formal educational programs in federally funded settings, community centers will likely play a key role in increasing knowledge around PrEP and other HIV prevention strategies in Southern Black communities.

Because this study was a qualitative assessment of barriers to PrEP with a non-representative sample, results may not be generalizable to larger communities and is not representative of YBMSM living in other geographic settings. However, all findings from this study were presented to fifteen Black MSM living in the state of Alabama to ensure

that major themes presented were culturally humble and representative of their lived experiences, increasing our confidence in generalizability. During this one-hour session, a lot of emphasis was placed on one of the most novel findings of this study, the call for more PrEP advertisements featuring men and women in heterosexual relationships. Participants provided several reasons why they felt this was necessary in Southern communities, but further research is needed to fully explore this finding to guide development of tailored interventions to increase uptake of PrEP among YBMSM living in the South. Another limitation of this study is that it may not have elucidated all the significant environmental barriers (e.g. state-wide insurance policies, PrEP deserts, etc.) that many YBMSM face in Southern communities as a result of poor access to healthcare, especially in states like Alabama that have not expanded Medicaid. In future research, the investigators will be exploring these environmental barriers in more depth, as an essential step reflective of our conceptual framework to help inform development of effective behavioral interventions.

This study uniquely provides perspectives of YBMSM newly diagnosed with HIV in an era when PrEP is available, which, to the authors knowledge, has not yet been provided in the literature. Understanding their stories of HIV diagnosis and perceptions around the current landscape for PrEP utilization may provide key gains in knowledge that will guide research to prevent widening inequities in the U.S. HIV epidemic. This study's findings provides novel information that can guide development of interventions tailored to YBMSM living in the South. Most importantly, it provides an opportunity to hear the voices and lived experiences of a group of men largely underrepresented in studies to date and failed by our current HIV prevention strategies.

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Compliance with Ethical Standards

Conflict of interest There are no conflict of interests for any of the authors of this manuscript.

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