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Reducing HIV transmission for African American and Latino gay and bisexual men: an integrative systematic review

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REDUCING HIV TRANSMISSION FOR AFRICAN AMERICAN AND LATINO GAY AND BISEXUAL MEN: AN INTEGRATIVE SYSTEMATIC REVIEW

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VITA

Brian Andrew Griffith was born in Chicago, Illinois, on February, 1996. He attended elementary school in Chicago and graduated from Taft High School with an IB diploma in June 2014. The following August he entered the University of California, Los Angeles and in June of 2018 received the degree of Bachelor of Arts in Psychology. He entered Pepperdine University in July 2018 and received a Master of Arts in Psychology in June 2020.

ABSTRACT

Black and Latinx men who have sex with men are disproportionately affected by HIV and have been for several years. It continues to be pervasive in both communities. Therefore, this review aims to examine the existing literature and succinctly discuss what has occurred in the fight to reduce HIV transmission rates for Black and Latino men. This review posed the following questions: (a) What are the unique challenges for Black and Latino gay and bisexual men in adherence and usage of PrEP medication? (b) What behaviors increase HIV transmission risk specific to Black and Latino gay and bisexual men? (c) What are effective behavioral interventions/treatments for reducing HIV transmission risk behaviors for Black and Latino gay and bisexual men? A systematic review of the current literature demonstrated that there are many unique challenges in adherence and usage of PrEP for Black and Latinx men (i.e., immigration status, income, education, access to services, stigma, etc.), a plethora of information for behaviors that contribute to higher rates of transmission of HIV (i.e., condomless anal sex, substance use, internet usage, etc.) and many effective interventions for reducing HIV transmission risk behaviors for Black and Latinx gay and bisexual men which are based in community-based participatory research programs.

Chapter 1: Background and Rationale

Statement of the Problem

HIV Prevalence Around the World

Since the beginning of the HIV/AIDS epidemic, an average of 79.3 million (55.9-110 million) people have been infected with HIV. Globally, 36.3 million (27.2-47.8 million) people have died of HIV. At the end of 2020, an estimated 37.7 million people were living with HIV. In 2020 alone, there were 680,000 (480,000-1.0 million) deaths. However, the burden of HIV varies greatly between different countries and regions. The greatest burden of HIV prevalence remains in Africa, where nearly one in every 25 adults live with HIV and accounts for more than two-thirds of the people living with HIV worldwide (World Health Organization [WHO], 2022).

HIV Prevalence in America

As of 2019, it is estimated that about 38 million individuals are living with HIV in the United States (UNAIDS, 2021). Additionally, there were about 690,000 people who died due to AIDS-related illnesses in 2019. However, as the CDC (2019) reported, gay, bisexual, and other men who have reported male-to-male sexual contact are the population most affected by HIV in the United States. Among these newly diagnosed HIV cases, 69% are from men who endorsed having sex with other men. To put this into perspective, an estimated 1.2 million Americans were diagnosed with HIV; however, 740,000 were gay and bisexual men (Linley et al., 2023). Within these statistics, it should be noted how Black and Latinx men are disproportionately affected by HIV.

HIV Prevalence in Latinx and African American Men in America

According to the Centers for Disease Control and Prevention (CDC, 2019), African American men who have sex with men (MSM) accounted for 26% of the new HIV infection in

2019. Latinx men also comprised 22% of new HIV infections in 2019. Thus, Latinx and African American men who have sex with men make up almost half of the new HIV infection rates for men who have sex with men in the United States. Moreover, 1 in 2 Black men who have sex with men throughout their lifetime will contract HIV, while the statistic for Latinx men is 1 in 5 (Hess et al., 2017). These populations need more specialized attention since there must be distinct challenges affecting these groups, causing them to have such high rates of HIV. Throughout this review, the word Latinx will be used inclusively when referring to all people from Latin countries or Hispanic origins. In contrast, the term Black will be used when referring to any person from the African Diaspora, primarily referring to Black people in America; if it is used more inclusively, it will be noted.

Cost of HIV Treatment Globally

The cost of HIV treatment globally varies significantly. Part of the variability comes from the various countries worldwide and their responses to HIV. Additionally, it depends on the antiretroviral medicine since there is first and second-line antiretroviral therapy. Currently, the average for the first- and second-line antiretroviral treatments are similar in low- and lower-middle-income countries. However, they are substantially higher in upper-middle-income countries (UNAIDS, 2021).

Cost of HIV Treatment

HIV can be very costly for both the patient and the government in the United States. In 2019, it was estimated that the average annual cost of HIV care in antiretroviral treatment (ART) was $19,912 (CDC, 2019). Additionally, this is the only medication that does not include any other outside costs relating to HIV, such as lab work, doctor visits, etc. Furthermore, if the patient cannot afford the medications, the government may have to pick up the difference.

Moreover, it was estimated that the lifetime HIV treatment costs were $367,134 in 2009 (CDC, 2019). Further, MSM's treatment cost is greater than heterosexuals (Tran et al., 2021). In all, it was estimated in 2019 that new diagnoses of HIV cost $16.6 billion (CDC, 2019). This number has increased from the average cost of HIV being $10.7 billion from 2002 to 2011 (CDC, 2019). Interestingly, it has been found that the discrepancies in life cost among Latinx MSM who have a lifetime cost of 394,395 is double that of some other populations (Schackman et al., 2015). In examining these amounts, it is evident that treating HIV is exceptionally costly for the patient and the government, which would mean any form of reducing HIV transmission would be imperative.

HIV Prevention

There have been considerable distinct ways HIV prevention has been addressed; however, the most widely known and recent is pre-exposure prophylaxis (PrEP; HIV.gov, 2017). There are currently two forms of PrEP on the market: Truvada and Descovy (Gilead, 2019; Truvada, 2020). There are generic versions of the drug, but this paper will only examine the brand-name drugs produced by Gilead. They work similarly by drastically reducing the chances of contracting HIV through sex; the medicine is to be taken once a day in adults (Gilead, 2019; TRUVADA, 2020). The main difference is the type of tenofovir contained in each. Descovy contains a new form of tenofovir called tenofovir alafenamide while Truvada contains tenofovir disoproxil fumarate (Gilead, 2019; TRUVADA, 2020). Tenofovir alafenamide has been proven and designed to enter HIV-infected cells more efficiently than tenofovir disoproxil fumarate; due to this, it can be given at lower dosages and is less impactful on kidney toxicity and bone density in comparison to tenofovir disoproxil fumarate (Gilead, 2019; TRUVADA, 2020). Additionally, these medicines only work for HIV-negative individuals; this is key to note because many of the

same active agents in these drugs are used in reducing viral loads in individuals who have HIV to make them undetectable.

However, while PrEP usage is the most common treatment, it seems challenging for Black and Latinx men to use. According to the CDC, Latino men who have sex with men used PrEP at a rate of 13% in 2016 (Guilamo-Ramos et al., 2020). Furthermore, Black/African American men who have sex with men utilized PrEP at an 11% rate. Taking these data together would mean that the vast majority of Black and Latino men who have sex with men who could greatly benefit from PrEP are not using it. In comparison, White men who have sex with men use PrEP at a rate of 69% (Guilamo-Ramos et al., 2020). Evident racial disparities exist in PrEP usage, and these need to be explored to facilitate better PrEP usage for Black and Latinx men staying HIV-negative.

Mental Health Concerns

In addition to these concerns, gay and bisexual men have higher rates of mental health disorders and problems (Cochran & Mays, 2008). It has been found that young men who have sex with men (YMSM) have heightened symptoms of depression, anxiety, and suicidality (Mustanski et al., 2010; Russell & Joyner, 2001). Moreover, despite YMSM having higher rates of sexual victimization and abuse, there is no evidence of higher rates of PTSD in comparison to heterosexual comparison groups (Cochran & Mays, 2008; D'Aguelli et al., 2006). This suggests these young men are growing up and identifying as gay and bisexual since those used in the study especially agree, based on a Likert scale, to having sex with men, causing the mental health of gay and bisexual men to be noteworthy as a specific group with special attention needed.

Combining these concerns of HIV and mental health, interventions should be specific to improving mental health and reducing HIV transmission risk behaviors for both Black and Latinx gay and bisexual men who are HIV-negative. The previous systematic review does mention psychosocial interventions that help with medication adherence. However, this does not address or examine HIV transmission risk behaviors through the mental health lens. Thus, this is still highly contentious. Therefore, this appears to be a crucial piece in bridging the gap in the real world to reduce HIV transmissions while improving mental health in Black and Latinx gay and bisexual men.

Overview of Current Research

Much of the public health research relevant to this dissertation describes gay or bisexual men as men who have sex with men. This is because the CDC surveillance systems use the behaviors that lead to transmission rather than how individuals self-identify their sexuality. This means their data encompasses more than just gay and bisexual men since it is based on sexual behaviors rather than sexual orientation. Even though these individuals may not identify with terms like bisexual or gay, this data is the best available from the CDC. Therefore, it will be used in understanding the behaviors and data points for gay and bisexual men even though it is more expansive than this. Additionally, using MSM instead of gay or bisexual will lend itself to a wider variety of research and resources to be included in this review.

HIV-risk behaviors vary widely from injection drug use to sexual behaviors. However, certain behaviors lead to more seroconversion than others. A meta-analysis has found that the riskiest act for HIV transmission via sexual exposure is receptive anal intercourse (P. Patel et al., 2014). This would be most applicable to men who have sex with men compared to men who have sex with female partners. Naturally, HIV risk is highest in unprotected anal sex. This

suggests that gay and bisexual men use the highest-risk HIV transmission method. Thus, reducing this behavior would reduce the overall HIV transmission rate.

Gay and Bisexual Men's Mental Health Needs

To transition to HIV-negative gay and bisexual men, the research has mixed reviews about mental health outcomes. It has been cited that gay and bisexual men have higher rates of mental health disorders, recognized or not (Cochran & Mays, 2008). However, some studies note that bisexual men have higher rates of mental health disorders or poor mental health outcomes because of their multiple levels of stress compared to gay men (Chan et al., 2020). Some research has pointed to bisexual men receiving ridicule from both the queer and straight communities for not fitting into either (Mereish et al., 2017). Moreover, gay men have higher levels of substance use and suicide (Berg et al., 2008; Bostwick et al., 2009; Gilman et al., 2001).

However, looking at this data through an intersectional lens, it is evident that Latino and Black men have higher rates of mental health concerns. To begin with Latino gay and bisexual men, it is estimated that 17% have suicidal ideation, 44% have anxiety symptoms, and 80% have depressed moods (R. M. Díaz et al., 2001). Additionally, discrimination was found to be a strong predictor of psychological symptoms. For Black gay and bisexual men, a recent cohort study found that 43.9% of participants had depressive symptoms, substance use, anxiety, and trauma (Hussen et al., 2021). Additionally, 79.1% of the Black males were referred to mental health services; only 19.6 remained engaged in mental health care (Hussen et al., 2021). Black and Latino males report decreased access to and usage of mental health services (Stormholm et al., 2013). Furthermore, Black and Latinx communities are more likely to have negative attitudes toward gay and bisexual men than white communities (Brown, 2005; Dodge et al., 2016; Sánchez et al., 2016).

Due to these higher rates of mental health disorders, it may be assumed that the mental health field has ample responses for these populations. However, this is not true. Many research studies address various levels of stigma and discrimination against gay and bisexual men (Goldin, 1994; Herek, 1999; Valdiserri, 2002). Further, some studies look at the implications of discrimination and stigma for mental health; they generally cite adverse outcomes for gay and bisexual men. They do not move past the stigma and discrimination to point to some interventions that might be helpful and applicable for gay and bisexual men, which is the purpose of this systematic review.

Psychosocial Interventions

In beginning the review, it would be helpful to define psychosocial interventions. These can be defined as a relationship with a client intending to prompt a better adaptation for the individual to a given situation (Horvath et al., 2011). In this review, this will be the standard by which psychosocial interventions will be evaluated. Thus, there will be a wide range of interventions that will fall into this category. These include counseling, motivational interviewing, case management/coordination, and psychotherapy. However, if other interventions meet the qualifications of assisting clients to better adapt to their given situation, these will be examined and considered for review.

Through some preliminary research, it has been found that psychosocial interventions enhance HIV medication adherence (Horvath et al., 2011). Medication adherence is vital to ensuring HIV transmission is drastically reduced for individuals on PrEP. As mentioned, Black and Latinx gay and bisexual men are at higher risk for contracting HIV while having lower rates of PrEP adherence. Thus, there needs to be a thorough investigation of bridging this gap. This review will examine interventions that are helpful on the front end in engaging Black and Latinx

men in becoming more compliant in taking their medication. Moreover, it will look at when Black and Latinx gays and bisexuals are not taking PrEP and what effective treatments/interventions will assist in reducing HIV transmission.

One meta-analysis found a small to moderate effect size in the positive effects on medication adherence for HIV-positive patients (Spaan et al., 2020). This study showcases that psychosocial interventions can improve medication adherence but does not give insight to HIV-negative individuals. However, if this study is extrapolated, it could be reasonably assumed that there could be positive effects on medical adherence for HIV-negative patients. In other words, while the bulk of research has focused on keeping HIV-positive folks on their medication, there should be increasing attention paid to HIV-negative individuals becoming HIV-positive.

Also, researchers are doing work to test the validity of specific interventions in reducing HIV transmission. One example is a study that looked at emotion regulation as an intervention to improve mental health and HIV transmission risk behaviors for HIV-positive gay and bisexual men (Parsons et al., 2017). This study specifically looked at gay and bisexual men with sexual compulsivity; however, this does not invalidate the study results for this review's purpose. It was found that improvements were observed in depression, anxiety, drug use, and HIV risk (Parson et al., 2016). Hence, this study is a stellar example of how a systematic review looking at various interventions could assist in mental health improvements and HIV risk behavior reduction.

Rationale, Primary Aims, and Research Questions

Consequently, it is improbable that the field will recommend psychosocial interventions for HIV-negative gay and bisexual Black and Latinx men to reduce HIV transmission rates and improve their overall mental health. This is due to the ongoing push for biomedical intervention, which has been foregrounded in the fight against HIV. Furthermore, although both these

populations are disproportionately affected by HIV, there has not been nearly as much attention to how this occurs and what needs to be done to combat HIV rates through psychosocial models. However, this systematic review will analyze various interventions and treatments specific to HIV- negative Black and Latinx men who identify as gay and bisexual. The effectiveness of these interventions will significantly advance the field by adding specific treatment types for these populations. Furthermore, it can be used by the public health sector to reduce HIV risk transmission behaviors.

The American Psychological Association (2021) has guidelines for LGBT clients. While these guidelines are a good start, they do not address the HIV transmission risk behaviors for gay and bisexual men. Additionally, they do not speak to effective treatments or interventions for these men. Thus, this systematic review will build upon these guidelines by giving information and intervention recommendations. No literature analysis addresses these groups on a large scale like a meta-analysis. Still, some literature explores novel ways of interventions and treatments that look at various elements of these groups, which this review will examine.

The guidance and information derived from this systematic review of the literature can be used by mental health clinicians and those working in the public health sector. It will have broad implications and can inform treatment plans and teams on dealing with HIV-negative individuals who may be medically non-adherent with their PrEP usage while helping those with mental health. Additionally, it can help adjunctive treatment in the mental health field by assisting clinicians in knowing the best practices for these distinct clients. Thus, the research questions for this study were as follows:

1. What are the unique challenges for Black and Latino gay and bisexual men in adherence and usage of PrEP medication?

2. What behaviors increase HIV transmission risk specific to Black and Latino gay and bisexual men?
3. What are effective behavioral interventions/treatments for reducing HIV transmission risk behaviors for Black and Latino gay and bisexual men?

Chapter 2: Methodology

Systematic Review Approach

The approach of the narrative system is most effective for this systematic review. It refers to the process of findings from multiple studies that primarily rely upon words and text to summarize the data (Popay et al., 2006). A narrative synthesis can have statistical data, but it is not the foregrounded piece of the synthesis. In turn, this approach provides the reader with a story of how the data of the various studies fit together while providing some statistical data as background if needed.

In performing this review, the narrative synthesis utilized was able to assess, examine, and evaluate the effectiveness of HIV adherence to medication and reduce HIV transmission. Although other meta-analyses were considered, more was needed to extract the type of data needed to answer the research questions. Thus, a narrative synthesis is the most suitable. The methods and design of this protocol are in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA+P); there will be an available file of this at the back of the protocol.

Eligibility Criteria

Inclusion Criteria

All studies in this review are written in English and be from peer-reviewed journals. Additionally, this review examined US-based and international academic studies. The target population that this review examined was gay and bisexual Black and Latinx men. Additionally, the studies speak to HIV risk and/or reduce this risk through mental health interventions or treatments.

For this review, sources published after 1996 were considered for inclusion. HIV medication before 1996 was sparse and mostly was to prevent the transmission of HIV from mother to child. However, in 1996, highly active antiretroviral therapy (HAART) became the new standard for treating and reducing HIV viral load (National Institute on Drug Abuse, 2020). Thus, this is the beginning stage where people could take medication to lower their viral load and become undetectable. Although there may be some effective mental health interventions prior to 1997, these may not encompass the current understanding of how the conversation around HIV has drastically changed. The author of this review will gather data from the most relevant studies to answer the questions put forth in this review.

Study Eligibility Criteria

Each study had to include four primary target variables to be included in this review. Firstly, a study must have participants who identify as male or are assigned male at birth. Secondly, the participant and/or study must be focused on gay, bisexuals, or men who have sex with men. Third, Black, African American, Latino, Hispanic, or Latinx men should be included. Lastly, the study should examine either the reduction of HIV transmission risk or effective mental health interventions for HIV transmission reduction. There are no research settings that were excluded from this review. It cannot be emphasized enough that this population has just begun being studied within the last few decades. Therefore, all data examining this population, such as community-based locations, college/university campuses, military/veterans settings, and hospitals, are eligible for inclusion.

Moreover, all approaches and designs, being mixed methods, qualitative, and quantitative, were considered in this review. Some quantitative data, such as descriptive and correlational, may be less applicable than others. However, these should not be immediately

excluded due to the potential benefit they could bring to the review. All types of qualitative designs were considered for inclusion in this review. Based on these methodologies, community-based research was emphasized since the target population is more likely to trust those within their community for mental health services instead of the settings mentioned above. Also, meta-analyses, literature reviews, and systematic reviews were considered for eligibility in this review. One of the objectives of this review was to present the gamut of experiences being showcased in the literature.

Exclusion Criteria

This review excluded the following sources: dissertations, non-English publications and sources, conference presentations, blog posts, personal interviews, videos, and newspaper articles. To reduce bias and uphold the quality of this review, the author did not be including any data from these sources.

Search, Screening, and Selection Process

Information Sources

The primary search repositories for this review were electronic databases. The search was carried out using the following electronic databases. The same search strategy was utilized: PsycINFO, PubMed, National Institute of Mental Health, SCOPUS, EBSCO, Google Scholar, and Sage Journals. These electronic databases were searched in pairs using specified search terms beginning with PsychINFO, SCOPUS, PubMed, and SCOPUS. Also, depending on the search volume, gray literature was explored to find additional articles and information. Moreover, the author conducted online searches using Google Scholar to acquire more data from white papers and annual reports published by private organizations and institutions. Additional information for this review has been further outlined in Appendix A.

Search Terms

An exhaustive list of search terms has been identified; these terms facilitated finding appropriate studies to be included in this review. Additionally, several suitable synonyms for most of the terms have been identified and will be used to enhance each database's searching capabilities. These can all be seen in Appendix B. However, the primary terms that will be used in this review for searching are: a) gay, b) bisexual, c) community-based, d) behaviors, e) outcomes, f) HIV, g) treatment/intervention, h) Black, and i) Latino.

There was a list of search terms and synonyms identified for this review. Similarities were grouped and assigned a numeric code (Appendix D). The grouping determines these in Appendix C, each database will be searched using a predetermined combination of the key search terms, and every search will be documented (Appendix E). The primary search terms that were used to identify gay/bisexual men were *gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man; bisexual men or bisexual gay or queer man or queer men or men who have sex with men*. The primary search terms that were used to identify Black were *African American or Afro-American or Afro-Latino or Black American or Black.* The primary search terms that were used to identify Latino were *Latino, Latinx, Hispanic, Chicano, Mexican, Puerto Rican, Cuban, Spanish-speaking, or non-White Hispanic.* The primary search terms that were used to identify community-based institutions were *community mental health center or community mental health services.* The primary search terms that were used to identify behavior were *risky sex work or unprotected sex or non-prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors.* The primary search terms that were used to identify HIV status were *HIV-positive/HIV-negative.* The primary search that were used to identify treatment/interventions

were *biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention.*

Selection of Studies

In Appendix C, **t**here is an implementation of the search strategy outlined and the search terms listed. The author started by conducting broad searches such as: gay/bisexual + Black+ HIV or gay/bisexual + Latino + HIV. When seeking to identify information about HIV transmission reduction, the author utilized the following primary search terms: gay/bisexual + HIV-negative intervention+ community-based.

The search results were screened for inclusion in the study using article titles, abstracts, and keywords, and the selection process will be cataloged in the Screening and Selection Record (Appendix D). This form was designed to document the inclusion and exclusion criteria selection process. Article titles and abstracts were examined first using a single search's inclusion and exclusion criteria for each identified article. The author then determined whether the document can be included based on its title or the information presented in its abstract. For articles that cannot be confirmed by using the abstract, the author conducted a full article review to determine their appropriateness for this review. Based on either the abstract review or full article review, the author indicated a recommendation for the selection of each study. The Chair was responsible for reviewing the Screen and Selection Record and will review a random set of studies to confirm compliance with the application of the inclusion and exclusion criteria while offering suggestions for revision if necessary. Suppose conflicting recommendations are made regarding a source's appropriateness for inclusion in the review. In that case, the author and Chair discussed the study's key variables to reach a consensus on inclusion. Any duplicates were removed after all searches are completed. Documentation records followed for each of the

previously mentioned steps, including reasons why unselected studies were not included, and a PRISMA-based flow chart (Appendix F) was used to summarize each step in the study selection process. The flowchart contains space for duplicate records to be removed, the total number of records screened, the total number excluded based on the screening criteria, the number of full-text documents reviewed for eligibility, and the number of excluded documents. Electronic versions of all documents or resources was maintained in three locations: (a) the hard drive of the author's computer, (b) the author's Mendeley account, and (c) a Google drive folder managed by the author.

Data Collection and Extraction

Development of the Data Extraction Form

This integrative systematic review is designed to utilize and synthesize the body of existing literature to identify pertinent types of interventions and treatments for keeping both gay/bisexual men who are HIV positive and negative individuals from spreading or contracting HIV. This was done by examining and evaluating treatments and interventions for the target population's work. To understand the information clearly, free from bias, the author restructured a document based on the Cochrane model for systematic reviews for Data Extraction Form (Appendix F; Higgins & Green, 2011). This form was designed to present key data points to be gathered by this review along with identifying if the study can be used within the examination. This form is broken down into the following categories: study/document information, general information, methodological information, setting information, participant information, intervention information, results and outcomes, and conclusion and follow-up. The author selected these to succinctly capture qualitative and quantitative studies while understanding that every study should fit within the aforementioned categories.

Data Collection and Coding

Study Documentation and Identification

For the first section of the Data Extraction Form, *Study/Document Identification*, the author included the following variables: document name, document ID, and full document title. Each article will receive a "document name" using the publication date and the last name of the document's first author. If there are cases where the last name of first author and publication date are the same, an alpha character followed the publication year to distinguish between the documents, such as 2010a Lopez, 2010b Lopez, and 2010c Lopez. Each source document will be given a three-digit number as its *document ID.* The three-digit numbering system will start at 100 and continue consecutively until each source receives a three-digit code. In the field, *full document title,* the complete identification of the source will be recorded as it is shown in the original source.

General Information

The second section is *general information*; the author has included the following variables: date form completed, source/publication type, source name, document language, and other. The data form completed was used to indicate the date that the Document Extraction Form was completed. The second variable was used to record the type of publication of the resource document and its name. The final variable was the language of the resource. The other category will be used to note any important information that may arise in the document.

Methodological Information

The third section, *Methodological Information,* the author included the following variables: the aim of the study, methods: general design, methods: specific design/approach, study start date, study end date, duration of participation, ethical approval obtained/needed for

the study. The author recorded the general aim of each resource by describing its purpose in the language used by the source document. The next variable used to describe the methodological approach/design used in the source document. The following variables was utilized to document the specific methodological approach. The next two variables were the study's initial start and end date and the duration of participation, allowing the researcher to record the amount of time study participants were involved in each study. The final variable in this section was used to record if approval was received from an Institutional Review Board.

Setting Information

In the following section of the Data Extraction Form, *Setting Information,* the author included the following variables: study location and data collection setting. The first variable was used to document the geographic location of each study, allowing the author to record any regional trends in research, treatment, and/or symptom presentation. The second variable was used to record where the data has been collected. With the geographic location information, the author was able to see trends and note possible gaps in regards to the types of settings or locations.

Participant Information

The author aimed to have a dynamic understanding of Black and Latinx gay and bisexual men regarding HIV contraction or HIV prevention. This section was designed with careful attention paid to uniqueness. The following variables were included in this section: (a) population description, (b) inclusion criteria, (c) exclusion criteria, (d) recruitment methods, (e) sample size, (f) participant gender, (g) participant age, (h) participant race/ethnicity, (i) participant sexual orientation,(j) participant HIV status, and (k) participants' socioeconomic

status. This was done to have a robust understanding of the population and to have inclusion and exclusion criteria to identify the participants.

Assessment of Research Variables

This section of the Data Extraction Form captured research variables as well as the assessments used by the researchers to document and track those variables. Since these will naturally vary from researcher to researcher, the author of this study has left space on the form to type them in individually. All variables for an individual study were given a generic name present on the form along with a specific name which will be found from the source material. For studies using non-standardized methods to collect data, such as patient reports, the specific methods will be named and described as Assessment *Method(s).*

Intervention Information

The next section of the Data Extraction form, *Intervention Information,* recorded descriptions of each intervention/treatment used in each study. The first variable for this section, *type of intervention,* is a general description of the type of intervention being used. Further, the *name of the intervention* recorded its name as it is referred to in the studies. The following variable specified the length of each intervention with a short description. The remaining four variables allowed recording information about control and experimental groups that may use these methodologies. If more than four interventions are used, the author added additional space for the study.

Results and Outcomes

This section of the extraction form documented and described all the relevant results named in each study. The form has space for up to eight items, and the author added additional space if needed for any study.

Conclusion and Follow-up

The final section of the extraction form, *Conclusions and Follow-up,* recorded the following variables: key conclusions of the study authors, study author's recommendations for further research, does this study directly address a research question, take-aways: general, take-aways: implications for practice, salient study limitations, references to other relevant studies, and further study information. The first variable in this section described the main conclusion established by the author of each source document; this is followed by a variable that named any recommendation for future research that the author specifies.

The following two variables in this section documented specific and general takeaways of each study. Specific takeaways related to clinical work are of the utmost importance to the author of this review since the goal of the review was to add value to the literature and provide clinicians with suggestions and recommendations for the effective reduction of HIV transmission. The variable *salient study limitation* is where limitations of each source document will be included in the review. It followed by recording any pertinent studies named/referenced in the source document.

Data Extraction

The researcher accessed electronic copies of the studies/resource documents to start the extraction process. After this was done, the author used the Data Extraction Form. The author examined each document, read the full text, and electronically enter pertinent data points into the Data Extraction form for each source. When the key variables named in the extraction form are absent, the author either left this section blank, or disregarded the study for continued use in the review. Further, there was consultation with the Chair to assess whether a study should be included in this review. Also, the Chair reviewed a random sample of source documents and

their extraction forms to ensure unbiased and accurate information capture. If any extraction discrepancies or inaccuracies are found, these were discussed with the author, so they could be corrected. Additionally, the Chair decided if another random sample should be reviewed. All finished Data Extraction Forms were stored electronically.

Quality Appraisal

Once all the relevant data points have been extracted from a source document, the quality of the source was then be assessed using a Quality Assessment Form (Appendix G). This form used a rating system that was developed by Hong et al. (2018) with a nine-question series that utilized a Likert scale to rate each item. With the use of both systems, the author was be able to conduct a thorough analysis of each source document.

The first part of the appraisal tool was designed by Hong et al. (2018). It is used to assess the quality of five different types of empirical studies: (a) qualitative, (b) randomized controlled quantitative, (c) non-randomized quantitative, (d) descriptive quantitative, and (e) mixed methods. In this section of the form, the researcher answered the first two screening questions for every included source document before answering the five methodological questions. The author continued to consult with the Chair on all items that receive an uncertain rating in this section.

The second part of the appraisal tool contained nine questions relating to the quality of the following domains: (a) strength of literature and rationale for the study, (b) clarity of research objective, (c) study design, (d) research sample, (e) measure and data tools, (f) data collection procedure, (g) analysis of data, (h) discussion of study limitations, and (i) consideration of culture and diversity. This section of the appraisal tool allowed the author to examine and evaluate more than an individual study's methodological design as it incorporates domains that capture the full breadth of each source document. Each of the nine questions received a rating of

strong/3, adequate/2, weak/1, missing/0, or not applicable. After these nine questions, the author will record the summation of the scores for all of the categories. This overall rating system served as the studies' ultimate appraisal system.

Data Management, Data Analysis, and Synthesis

Database Development

A central database was created to collect and store the data gathered from all studies into a single document. This database was an Excel spreadsheet using the variables from the Data Extraction and Quality Assessment Forms to facilitate the author being able to view all data points from all studies easily. This primary database was a comprehensive spreadsheet that housed all relevant extracted data and appraisal information from all the studies. Duplicate spreadsheets were created to hold all data points from both qualitative studies and quantitative studies. The author recognized that incorporating the two databases may be essential and beneficial for adequate synthetization.

Data Analysis and Synthesis

The author considered the extensive information that will be collected by this systematic study and has been careful of the data analysis process from the projection's initiation. The process informed by the research question put forth in this review: (a) what are behaviors that increase HIV transmission risk, (b) what are behaviors specific to Black and Latinx gay and bisexual men for HIV transmission risk, (c) what are effective interventions/treatments for reducing HIV transmission risk behaviors for HIV- negative gay and bisexual men.

When the included studies have been reviewed, extracted, and coded, the author created additional specialized databases so that studies addressing the same research question are grouped together. Both the qualitative and quantitative databases were categorized to answer the

research question. In doing this, the author examined each individual question by reviewing the data for the questions. The author also clustered the information based on participant age, geographic location of the study, or sample size. These clusters allowed for more comprehensive observations of patterns that may be present within studies addressing the same research question.

Reporting of the Results

The Evidence Table was meant to present the systematic review results, reporting the high-level detailed findings from the resources reviewed. A preliminary Evidence Table was developed and recorded the following information from each study reviewed: author, title, publication year, study aim, sample characteristics, interventions utilized, and results/main findings. The Evidence Table, charts, and graphs was the author's primary mode of reporting the results and findings of this review.

Chapter 3: Results

Study Selection

A total of 4,946 publications were identified using electronic databases. Duplicate publications were removed using automated features of Microsoft Excel along with Mendeley's duplicate feature, which resulted in 275 duplicates for removal before the screening process. This left a total of 4,671 for title screening. After reviewing the titles and abstracts in the context of identifiable criteria, 4,311 records were excluded, resulting in 360 full-text articles being assessed comprehensively for eligibility. Of the full-text studies assessed, 248 were excluded, primarily due to being unable to answer the research questions, articles addressing social phenomena related to HIV prevention or PrEP adherence, and articles not specifically having Latinx or Black men as a primary population. In sum, 112 studies were included in this qualitative synthesis and quantitative descriptive summaries.

Results Overview

Given that this paper aimed to examine issues related to Black and Latinx men who have sex with men (BLMSM), it would simplify the process to explain the results based on how they apply to one or both groups. However, to not confound the findings of the data and to preserve the integrity of Black and Latinx men's needs independently of one another, the results will describe Black and Latinx MSM separately and then together when results/data apply to both. Further, it should be noted that since many studies examined bisexual and gay men who were Latinx and Black, these will be grouped under MSM. There were 23 articles exclusively related to Latinx men, 70 articles exclusively related to Black men, and 19 that encompassed information pertinent to Latinx and Black men who have sex with men. With this in mind, the

results will first reflect the articles specific to the group and then integrate the data which applies to both groups.

Overall Key Findings

One general key finding is that much more research has been done on Black men than on Latinx men. Further, several studies note how important immigration relates to access to PrEP for Latinx men (Crepaz et al., 2021; S. E. Diaz., 2020; Harkness et al., 2021; Lee et al., 2022; Martinez, 2021; Mimiaga et al., 2015; Painter et al., 2019). Additionally, Black and Latinx men struggle with initiation and adherence to PrEP due to a lack of income, health insurance, and education (Andriano et al., 2022; Assaf et al., 2021; Closson et al., 2018; Crepaz et al., 2021; Eaton et al., 2017; Etowa et al., 2022; Fields et al., 2020; Garcia et al., 2015; German et al., 2017; Ibarra, 2009; Jin et al., 2021; Lee et al., 2022; Montgomery et al., 2021). The most common HIV transmission for both Black and Latinx MSM was condomless anal sex (CAS; Bedoya et al., 2012; Boyer et al., 2019; Crepaz et al., 2021; Closson et al., 2018; S. E. Diaz., 2020; Djiadeu et al., 2020; Garcia et al., 2015; German et al., 2017; Gomez et al., 2017; Ibarra, 2009; Joseph et al., 2018; Kalichman et al., 2017; Kelly et al., 2013; Kelly et al., 2016; Martinez et al., 2016; Munoz-Laboy & Dodge, 2007; Reback & Larkins, 2013; Rubio Mendoza et al., 2015; Williams & Sallar, 2010; Wilton, 2008; Wohl et al., 2002). Many key takeaways are related to interventions, including some peer support elements/connections, community-based participatory research, and accessibility to participants. Related to the research questions, all key takeaways will be discussed at greater length in their respective sections.

Research Question #1: Unique Challenges for Black and Latinx men Regarding Adherence to and Usage of PrEP Medication

Latinx Men

Regarding Latinx men who have sex with men, several aspects of PrEP adherence do not apply to Black men. Many of the studies noted the interaction between Latinx men who were either undocumented or recently immigrating to a country and how this impacted their PrEp knowledge and access (Crepaz et al., 2021; S. E. Diaz., 2020; Harkness et al., 2021; Lee et al., 2022; Martinez, 2021; Mimiaga et al., 2015; Painter et al., 2019). It has been shown that acculturation moderates protective HIV behaviors in Latinx men which means the less assimilated (i.e., more Spanish use, not born in the U.S., and higher ethnic identification) to American culture Latinx men are, the more protected they are from CAS (S. E. Diaz., 2020). Relatedly, Latinx men who were monolingual Spanish speakers had less knowledge of HIV prevention; thus, they were less likely to be aware of PrEP (Painter et al., 2019). Moreover, some studies mentioned the significance of the language barrier related to the patient trying to communicate their needs and the provider relaying information about PrEP (Crepaz et al., 2021; Painter et al., 2019).

A study on men in Latin American countries concluded that men in higher socioeconomic brackets aged 28-30 have more prep awareness, making them more likely to engage in PrEP services (Assaf et al., 2021). Additionally, the authors found that Latin American men who identified their race as white had the highest awareness of PrEP in both Brazil and Peru (Assaf et al., 2021). Moreover, those with higher incomes in Mexico, Brazil, and Peru all reported more awareness of PrEP (Assaf et al., 2021). These two things are interrelated because many white-identified individuals are the same individuals with higher incomes. Furthermore, it

should be noted that the authors found associations between higher education and higher income and access to information about PrEP (Assaf et al., 2021). Therefore, it is clear that there are inequalities in access to PrEP information for those who are not as fortunate or do not identify as white. Relatedly, Latinx men who have immigrated to the United States encountered some unique challenges for them as well. According to one study, many came from nations with anti-gay rhetoric (S. E. Diaz., 2020). Hence, they were much less inclined to seek out PrEP services due to coming from environments and contexts that are highly discriminatory (S. E. Diaz., 2020).

Black Men

When examining the literature on Black men who have sex with men, some unique aspects do not apply to Latinx men. There was an emphasis on communication between clinicians and patients; this varied by study, but to summarize: clinicians need to do more to make Black men feel comfortable in talking about their sexual behaviors and be more approachable (Babel et al., 2021; Dangerfield, Lipson, & Anderson, 2022; Eaton et al., 2017; Elopre et al., 2018; Garcia et al., 2015; Wiginton et al., 2021). In line with this, many articles discussed the side effects of PrEP being a deterrent to initiating PrEP services (Fields et al., 2020; Jaramillo et al., 2021). These side effects included loss of bone density and kidney failure being linked to PrEP usage (Jaramillo et al., 2021). Further, it was found that within the population, there was a general lack of interest in PrEP; Black men did not think they needed it and viewed condoms as an alternative to it (Algarin et al., 2019; Elopre et al., 2018; Lockard et al., 2019; William & Sallar, 2010).

There is great emphasis on conspiracy beliefs/theories about PrEP usage for Black men. Many studies have cited that Black men who have sex with men are not taking PrEP because of their beliefs related to their understanding of HIV/AIDS (Bogart et al., 2010; Fields et al., 2020;

Garcia et al., 2015; Jaramillo et al., 2021; Mutchler et al., 2015; Wiginton et al., 2021). Other studies have found that Black men either have chosen to use PrEP or see condoms as a stand-in for it (Lockard et al., 2019), meaning they are only using condoms instead of using PrEP (Fields et al., 2020). Further, there is some evidence that Black men prefer condoms to daily PrEP for HIV prevention (Lockard et al., 2019). For Black men in other countries, no literature was included in this meta-analysis about their PrEP initiation experience. This is due to not many studies being done about the experience of Black men worldwide as it relates to starting PrEP.

Interestingly, some studies found a connection between masculinity and interest in PrEP related to Black men. The higher their endorsement of more traditional masculine beliefs, the more these studies found participants less interested in PrEP (Driver et al., 2021; Eaton et al., 2017). Along the same lines, there was a study that examined the interaction between internalized racism and HIV risk and found some evidence for an association between the two where high levels of internalized racism were associated with higher levels of PrEP. However, they were not statistically significant (Whitfield et al., 2020). The authors were unsure about how this association occurred. However, it can be somewhat understood through the lens of social stigma. Black men who accept PrEP benefits compared to those who are not may have as much social stigma around medicine. Some of this could be related to internalized racism and adapting to white standards of medical care. A couple of studies discussed PrEP being used to increase promiscuity as a barrier to PrEP (Elopre et al., 2018; Mutchler et al., 2015). Furthermore, it was found that being closer to the gay community for Black men was associated with greater PrEP knowledge and participation in health promotion programs (Eaton et al., 2015; Hotton et al., 2018; Levy et al., 2014; Watkins et al., 2016).

Black and Latinx Communities Overlap With PrEP Adherence and Usage

There are many different challenges that both Latinx and Black men share when it comes to starting PrEP. Many articles have pointed to challenges related to social determinants of health. These have included low education, lack of employment/income, and insufficient health insurance (Andriano et al., 2022; Assaf et al., 2021; Closson et al., 2018; Crepaz et al., 2021; Eaton et al., 2017; Etowa et al., 2022; Fields et al., 2020; Garcia et al., 2015; German et al., 2017; Ibarra, 2009; Jin et al., 2021; Montgomery et al., 2021). Specifically, one study found that HIV-negative partners whose annual household income was greater than $30,000 but less than or equal to $50,000 had significantly greater odds of being adherent to PrEP than those whose annual household income was $30,000 or less (Jin et al., 2021). The authors hypothesized that there is a "sweet spot" between qualifying for comprehensive health insurance based on need and qualifying at all. Additionally, many programs subsidize PrEP costs; however, these programs do not usually cover adjacent issues such as co-pay for visits or cost of travel to and from appointments; therefore, those who fall on the lower end of the income bracket may have more coverage/assistance in making their appointments in comparison to those on the higher end of the range (Jin et al., 2021).

Additionally, evidence suggests that it is even uncomfortable for healthcare providers to prescribe PrEP since they are unfamiliar with it and its prevention measures (Babel et al., 2021; Dangerfield et al., 2022). Further, there has been some research related to both groups not being generally interested in whether they are PrEP naive or not (Algarin et al., 2019; Garcia et al., 2015). In other words, Black and Latinx men have been told about PrEP, its benefits, and how it works, but they have opted not to use it for one reason or another. As the literature describes, there is usually a lack of interest or personal valence. Also, this includes individuals who did not

know about PrEP and were told how it could benefit them, and they still decided they did not want to begin taking the medication.

Moreover, the stigma surrounding PrEP at multiple levels has impeded PrEP and adherence to it for Black and Latinx MSM (Babel et al., 2021; Dangerfield et al., 2022; Garcia et al., 2015; Jaramillo et al., 2021). One meta-analysis study explored 11 studies that found associations between stigma and PrEP awareness and use (Babel et al., 2021). More specifically, the less each group knew about PrEP, possibly due to stigma, the less likely they were to engage with PrEP services. Additionally, the same study reported that cultural norms related to belonging to either race (i.e., perceived healthcare discrimination or not disclosing sexual orientation) in each group decreased the visibility and availability of services (Babel et al., 2021). Consequently, there is a general lack of PrEP awareness for both groups compared to other MSM groups (Algarin et al., 2019; Crepaz et al., 2021; Harkness et al., 2021). There are multiple layers to the lack of awareness in compiling the information. There is misinformation about how PrEP works (Painter et al., 2019). There is again the theme of personal valence or having a low perceived need to be on PrEP, therefore, ruling it out as a possibility. Further, there is a lack of discussion in both communities about PrEP and its benefits. Moreover, this does not begin to expand on the years of medical mistrust and not feeling like doctors have the best intentions. Some find PrEP not to be really based on its ability to prevent HIV spread, with no significant drawbacks, and will not take it because it must have some adverse effects. These highlight why both groups may not be as aware or open to taking PrEP.

Researchers have also found that Black and Latinx men would be more receptive to initiating PrEP if the medical professionals looked like them (Crepaz et al., 2021; Harkness et al., 2021; Jaramillo et al., 2021). In addition, some studies point to both Latinx and Black MSM

generally discussing PrEP less with their providers in comparison to White MSM (Babel et al., 2021; Garcia et al., 2015; Harness et al., 2021; Maulsby et al., 2014; Pitasi et al., 2021). This is primarily due to both groups feeling more comfortable talking and taking advice from someone who resembles them (Jaramillo et al., 2021). Also, there is an added layer because some of the medical professors who are queer-identified and look like them could be an extra layer of support in navigating the medical space. Plus, they would understand the need for PrEP and much more as an identified queer man of color. Another dimension of this would be connection which is discussed later in this review. However, men within both communities wanted MSM of color to have an open dialogue that could begin with medical professionals.

Research Question #2: Behaviors That Increase HIV Risk Specific to Black and Latinx Gay and Bisexual Men

For this research question, the literature has many overlapping concerns for Black and Latinx men, no matter how they self-identify. The same core issues came up again and again, this being CAS (Allen et al., 2015; Bedoya et al., 2012; Boyer et al., 2019; Crepaz et al., 2021; Closson et al., 2018; S. E. Diaz., 2020; Djiadeu et al., 2020; Garcia et al., 2015; German et al., 2017; Gómez et al., 2017; Ibarra, 2009; Joseph et al., 2018; Kalichman et al., 2017; Kelly et al., 2013; Kelly et al., 2016; Martinez et al., 2016; Muñoz-Laboy & Dodge, 2007; Reback & Larkins, 2013; Rubio Mendoza et al., 2015; Williams & Sallar, 2010; Wilton, 2008; Wohl et al., 2002). However, even when people were using condoms, they were not using them consistently or adequately, and their overall usage of them was low (Crosby et al., 2015; Duncan et al., 2019; Hergenrather et al., 2016; Kelly et al., 2016; Marks et al., 2009; Montgomery et al., 2021; Reback & Larkins, 2013; Rhodes et al., 2006; Wohl et al., 2002). In addition to this, the literature has also pointed to engaging in the receptive penetrative position (commonly referred to as the

bottom in sex) can be a behavior that increases HIV risk (Closson et al., 2018; German et al., 2017; Higa et al., 2020; Kalichman et al., 2017; Kelly et al., 2013; Koblin et al., 2013; Muñoz-Laboy & Dodge, 2007; Reback & Larkins, 2013). Connected to this, some studies found that both groups were not as interested in sex if it was protected sex since it did not feel as good (Bedoya et al., 2012; Nelson et al., 2017; Reback & Larkins, 2013). One exciting result one study found was that HIV-negative men who had CAS were more likely to adhere to PrEP despite engaging in higher-risk HIV transmission behaviors (Jin et al., 2021). Additionally, serosorting, when a person selects only people of the same status as themselves, also seemed to indicate higher risk behavior (Higa et al., 2020). This would mean an HIV-negative individual is only engaging in sex with someone else they believe/have been told to be HIV-negative, which gives the false impression of security because they think these individuals are not HIV-positive. Therefore, they may not be on PrEP and still have sex without condoms because they have selected someone who is HIV-negative and hence could not give them HIV. Yet, it has been proven that some men are unaware of their status, indicating higher risk behaviors.

Related to sexual risk, there is much research on transactional sex as an increase in HIV risk. These can be various items; however, the most common are money (Boyer et al., 2019; Ibarra, 2009; Joseph et al., 2018; V. V. Patel et al., 2016; Reback & Larkins, 2013; Rubio Mendoza et al., 2015), clothes (V. V. Patel et al., 2016), and substances/drugs (V. V. Patel et al., 2016; Reback & Larkins, 2013). Some studies only noted transactional sex and did not specify what goods were being received (Harawa et al., 2004; Hotton et al., 2018; Oldenburg et al., 2015; Reback & Larkins, 2013). Further, some studies report that Black and Latinx gay and bisexual men have more sex outside of their primary relationship, in comparison to their heterosexual counterparts, and are at higher risk for HIV as a result (De Santis et al., 2017;

Martinez et al., 2016; Kelly et al., 2016; Kelly et al., 2013; Boyer et al., 2019; Williams & Sallar, 2010). There are several reasons why this may occur. One study pointed to CAS outside of the primary relationship being more related to alcohol and marijuana usage (Kelly et al., 2016). However, it should be noted the sexual complexity within queer relationships; this would mean some people may have the impression that their relationship is open. However, the way researchers ask questions (i.e., are you having sex outside of your primary partner) might lead to swaying research. Individuals may have open relationships or may have a main sexual partner while having other sexual partners as well. The framework in which these questions are posed has its foundations in heteronormativity which do not allow for the sexual exploration of multiple partners or more modern expressions of sexuality. Additionally, studies have noted that having more casual sex partners can increase HIV risk (Closson et al., 2018; Djadeu et al., 2020; Kalichman et al., 2017; Rosenberg et al., 2011; Wilton, 2008). Based on the studies collected, there seems to be some consensus that at least six sexual partners within six months are considered higher-risk behaviors (Akin et al., 2008; Djiadeu et al., 2020; Gómez et al., 2017; Lee et al., 2022). One study noted how Latin America and Sub-Saharan Africa had elevated levels of MSM who engaged in transactional sex (Oldenburg et al., 2015). This was primarily due to MSM having lower economic status, and these men had self-identified as sex workers. Many of them reported being discriminated against based on their sexual orientation and resorted to having to use sex work to make ends meet.

Black MSM who engaged in religious activities had some fascinating data. Watkins et al. (2016) found that their religiosity index was significantly associated with HIV infection and cocaine, crack, poppers, nitrate inhalant used to enjoy sex more, and some ecstasy use. Thus, the higher someone endorsed their religiosity, the more likely they were to use substances. The

religiosity index was defined using four questions for religion and three for spirituality. These seven questions were (a) worship, (b) openness about sexuality, (c) religious beliefs, (d) choosing religious beliefs, (e) guidance, (f) spiritual connections, and (g) spirituality and health. These were all done using the Likert scale from missing to agree strongly. Also, they found a positive association, not significant, with non-prescription drug use (Watkins et al., 2016). Paradoxically, they found a non-significant negative association between religiosity and CAS (Watkins et al., 2016).

The subsequent behavior found to increase HIV risk was drinking/alcohol usage. Many studies cite high alcohol usage as an increased risk factor for contracting HIV (Allen et al., 2015; Boyer et al., 2019; Hotton et al., 2018; Kelly et al., 2013; Kelly et al., 2016). Additionally, studies have noted that alcohol impairs decision-making and makes CAS more likely to happen (Allen et al., 2015; Reback & Larkins, 2013). Wilton (2008) demonstrated that alcohol use before or during sex was predictive of having a primary sex, casual sex partner, and a higher number of male sex partners, while recreational drug use was associated with a casual sex partner, CAS with a male sex partner, and being younger.

Many studies spoke about hard substance use. This was somewhat hard to disentangle from both condomless sex and alcohol use. However, many studies noted how illicit drug use was associated with increased odds of sexual risk (Friedman et al., 2014; German et al., 2017; Hotton et al., 2018; Ibarra, 2009; Joseph et al., 2018; Kelly et al., 2013, 2016; Masksut et al., 2020; Mizuno et al., 2015; Reback & Larkins, 2013; Rhodes et al., 2006; Rubio Mendoza et al., 2015; Takada et al., 2021). One substance of note was popper which is increasingly becoming popular among sexual minority men (Liu et al., 2022). However, poppers were linked to increased high-risk sexual activity (Bedoya et al., 2012; Higa et al., 2020; Kelly et al., 2013).

Additionally, methamphetamine use during sex had an associated increase with HIV infection (Bedoya et al., 2012; Higa et al., 2020; Ibarra, 2009; Kelly et al., 2016; Lewis & Wilson, 2017; Quinn et al., 2020; Reback & Larkins, 2013). Another principal substance of note was marijuana (Akin et al., 2008; Bedoya et al., 2012; Boyer et al., 2019; German et al., 2017; Joseph et al., 2018; Kelly et al., 2013; Mendoza et al., 2015).

Black MSM Substance Use

Black MSM and substance use warrants a more extensive discussion because many studies specifically examined this. Maksut et al. (2020) found through self-reports at Black Pride Events that only 3.6% of all their Black male participants used injection drugs in their lifetime. However, 58.5% had participated in injection drug use in the past six months based on their self-report. Further, their study found that Black men who did not have injection drug use were much more likely to report using opioids, methamphetamine, and cocaine (Maksut et al., 2020). Many studies found that substance use among Black MSM was common (Allen et al., 2015; German et al., 2017; Higa et al., 2020; Kelly et al., 2016; Maksut et al., 2020; Reback & Larkins, 2013; Wilton, 2008). However, Harawa et al. (2004) found that substance use was higher in white Latinx than in Black men.

It should be noted that not all the results were this conclusive related to substance use and CAS. One study found that high rates of HIV infection for Black MSM were not attributable to a higher frequency of risky sexual behaviors or reported use of alcohol or illicit substances (Millet et al., 2006). They found the evidence insufficient in their examination of the literature. Additionally, Harawa et al. (2004) found that potentially risky sex and drug-using behaviors were generally reported most frequently by white and least frequently by Black men.

Latinx MSM Substance Use

Also, one study noted how substance use did not differ between U.S.-born and foreign-born Latinx MSM (Mizuno et al., 2015). They found that foreign-born Latinx men binge drink more than U.S. Latinx men. Moreover, their data pointed to foreign-born men who have been in the U.S. for 15 years or longer were more likely to engage in sexual risk behaviors and were more likely to use illicit drugs and binge drink (Mizuno et al., 2015). Similar results were found in other studies where Latinx MSM consumed higher levels of alcohol (Ibarra, 2009) and illicit drug use compared to white male counterparts (Akin et al., 2008; Ibarra, 2009).

When bringing condomless sex, alcohol use, and substances together, there is a drastic increase in HIV transmission risk. Many studies noted how substance use (both alcohol and drugs) before and during sex was associated with increased condomless anal sex (Akin et al., 2008; Bedoya et al., 2012; Higa et al., 2020; Martinez et al., 2016; Wilton, 2008). Another study noted how young men of color have differences in substance use and sexual risk behaviors. They found that Latinx young men who have sex with men (YMSM) were likelier to have met an internet sexual partner than Black YMSM (Garofalo et al., 2010). Moreover, Latinx YMSM reported more binge drinking, street drug, and methamphetamine use than Black YMSM (Garofalo et al., 2010).

Aside from this, a behavior linked to HIV transmission risk that is not as well researched would be internet usage/seeking sex using social media. Some researchers examined social media use and how it may relate to HIV risk behaviors. They found that over half of their participants used social media, most often via a mobile device, to seek out sex partners (V. V. Patel et al., 2016). Other studies have found similar results where Black and Latinx MSM meet casual sex partners on the Internet (Rubio Mendoza et al., 2015). Nelson et al. (2017) found that

the Black MSM who engage in sexually explicit media (SEM; i.e., porn) vast majority of them prefer their content condomless which translates into their personal lives with increasing factors such as bisexuality and engaging in transactional sex. They reported more significant agreement with sexual risk cognitions (i.e., heat-of-the-moment decisions). Further, they found an association between SEM and alcohol misuse, use of multiple drugs, and serodiscordant condomless anal intercourse (Nelson et al., 2017).

For Latinx men, a study looked at acculturation as it related to HIV risk. They found positive peer condom use, lower English language use, and being born outside of the U.S. were associated with fewer serodiscordant condomless anal intercourse (S. E. Diaz., 2020). This would mean that Latinx men born outside of the U.S. with less English proficiency who see their peers engage in condom use/have a positive perception of condom use are more likely to engage in condom use than those whose friends do not share their same opinion or behavior.

It is worth noting how experiences of homophobia impact sexual risk behaviors. One study found that incidents of homophobia were associated with the likelihood of using methamphetamines during sex, transactional sex, and missing appointments (Takada et al., 2021). Another study found that half of the Latinx MSM population experienced homophobia associated with recent sexual risk behaviors and sex under the influence of drugs or alcohol (Jeffries et al., 2021). Further, this same study found homophobia was associated with having any sexual risk behavior, receptive CAS, and an increased number of sex partners (Jeffries et al., 2021).

Research Question #3: Effective Behavioral Interventions/Treatments for Reducing HIV Transmission Risk Behaviors for Black and Latinx Gay and Bisexual Men

Interventions Specific to Latinx Men

There was a study done by Martinez et al. (2017) where they followed several steps before creating an intervention for predominantly Spanish-speaking gay couples and ten service providers. These steps included (a) engaging community stakeholders, (b) capturing the lived experiences of Latinx gay couples, (c) identifying intervention priorities, (d) integrating the original intervention's social cognitive theory into a relationship-oriented, ecological framework for Latinx gay couples, (e) adapting interventions activities and materials. The intervention they developed was called *Latinos en Pareja,* which was adapted from Connect' n Unite (CNU; Martinez et al., 2017). Their intervention is designed to reduce risky behaviors in four sessions by introducing self-care, communication, relationship strengthening, and couple problem-solving for couples. Since it was not tested, the authors speculate that *Latinos en Pareja* can be promising prevention interventions, especially for Spanish-speaking couples. Similarly, Martinez (2021) writes about the importance of interventions going through community-based participatory research programs (CBPR) to ensure all collaborators have a chance to share their expertise and ownership. Further, he speaks about the pivotal aspects of commitment to CBPR interventions that shift power imbalances within research.

Another study used culturally tailored social media content to reach Latinx, immigrant sexual minority men. To construct their intervention, Lee et al. (2022) did three focus groups with 15 Latinx immigrant sexual minority men to refine HIV prevention content to be piloted on social media platforms. After constructing the content, it was placed on Instagram and Facebook for nine days. This content took the engagers to another website with additional HIV prevention

information and some information to fill out pertinent to access HIV information and prevention tools. Their results showed that they could reach Latinx immigrant sexual minority men who were undocumented, had low levels of education, and were unemployed, which demonstrates that these populations can be reached through social media as a medium. Most of the success of this intervention hinged on the focus groups that provided input to ensure the cultural sensitivity of the designs. Many of the focus groups contributed to inclusive social media content for those who may gather their sexual health information from social media, such as Facebook, in a manner that did not feel punitive for not being on PrEP or engaging in safer sex practices.

There have been several interventions worth noting related to studies that specifically focused on Latinx MSM. A study reported an adaptation of an intervention called *VOCES/VOICES*, a single-session intervention designed for heterosexuals to reduce at-risk sexual behaviors, into No Excuses/Sin buscar excuses for Latinx MSM, which was based on showing participants a film and asking detailed questions about testing behaviors and HIV risk behaviors over multiple sessions and groups (O'Donnell et al., 2014). The authors found that their interventions reduced the number of male partners with whom respondents had CAS from 2.8 baselines to 1.2 at follow-up, a decrease in the mean number of total sex partners from 6.5 to 3.6, and the proportion of men who reported three or more partners decreased from 71.5% to 42.7% (O'Donnell et al., 2014). Another study conducted by Vega et. (2011) was called *SOMOS* ("we are"). It is a multilayered HIV intervention incorporating and integrating psychosocial and community factors through multiple session groups. Additionally, *SOMOS* has three components where participants do group sessions, social marketing, and community presentations. The results from baseline to 90 days are statistically significant where participants had more

HIV/AIDS knowledge; the mean number of sexual partners decreased from 1.62 to 1.18, and the HIV-risk index score decreased from 5.33 to 4.35 (Vega et al., 2011).

Continuing with Latinx MSM interventions, an intervention was done in Canada designed for Spanish-speaking MSM. This program was called *Mano en Mano/Hand in Hand*, which consists of an initial day-long session followed by 2-hour evening sessions addressing HIV prevention, social isolation, social service, and migration. The results showed a significant decrease in CAS from the pre-test to the post-test and decreased social isolation, as expressed in exit interviews (Adam et al., 2011).

Interventions Specific to Black MSM

Moving into interventions specific to Black MSM, there are multiple studies with unique styles to address HIV prevention for Black MSM. HealthMpowerment was at first a website, then became an app. When it was a website, it was user-driven. It provided social support to the user to reduce risky sexual behaviors, promote health and wellness, and support community-building among YBMSM and transwomen (Muessig et al., 2014). As a website, it showed promise in being an intervention towards behavior changes towards safer sex practices (Muessig et al., 2014). HealthMpowerment is a mobile phone app optimized intervention to reduce sexual risk and support community building for YMSM (Sallabank et al., 2022). This app has forum conversations covering various topics, including media representation of Black gay and bisexual men and stigma related to identity. Since it is a forum-based app, the authors speculated that HealthMpowerment provided a space to challenge stigmatizing representations of Black queerness. It allowed Black MSM to garner social support and celebrate positive media representations based on the responses in the forums (Sallabank et al., 2022).

Related to these studies, Muessig et al. (2013) did a study on developing phone-based HIV interventions for Black MSM. This study was before HealthMpowerment, where they examined Black MSM usage of their mobile devices for various activities related to sex. They found that half of their participants used phones to find sex partners, and over half used their phones to find health information (Muessig et al., 2013). Thus, the conclusion would be that using a mobile device would be acceptable for HIV intervention (Muessig et al., 2013). This is an essential study of sexual practices since it was done in the era when queer culture was moving to an online medium. Before, there were primarily spaces or places where people would gather to learn about HIV or in-person interventions. However, this study was part of a larger body of literature pointing to the feasibility of having online HIV interventions. One novel study by Castel et al. (2021) focused on a life-simulation intervention for Black YMSM. This intervention was a game where participants could engage in real-life behaviors and receive their HIV risk profile (Castel et al., 2021). Participants were given three months to play from enrollment and had up to 30 hours of content available. The authors found that their game can potentially improve knowledge of HIV and PrEP among Black YMSM, increase motivation and self-efficacy to HIV testing and PrEP use, and decrease individual and structural barriers (Castel et al., 2021).

Another study provided Black MSM with assistance with PrEP counseling across the continuum. This study had a control group that was encouraged to seek PrEP from a PrEP navigator, while the experimental group was given a PrEP counseling center group (Desrosiers et al., 2019). The intervention group received assistance identifying and making appointments with a PrEP provider or community resources based on their needs and appointment reminders (Desrosiers et al., 2019). They were also given contact information for PrEP counselors and

encouraged to schedule with them; however, these appointments were not made for them. They found that 85% of those in the intervention group had discussed PrEP with their medical provider compared to the 42% in the control group at the 3-month follow-up visit.

Related to Black MSM, barber shops were thought to be a place where HIV prevention information could be disseminated easily due to barber shops being critical cultural institutions (Jemmott et al., 2017). One study provided men with a single small group, peer-led sessions on HIV risk reduction skills and motivation, community health empowerment, and identification of personal strengths and communication skills. In contrast, the control group received prostate cancer screening information. At the 3-month follow-up, the barbershop intervention participants reported no CAS as compared to the 54.1% in the control group (Wilson et al., 2019). Another barbershop intervention that is in development is a 2-day HIV risk reduction program focused on increasing HIV knowledge and condom use and reducing the number of sexual partners. During these 2 days, iPads were to be used by barbers to facilitate the intervention that would provide clients with information. They sought assistance in implementing and developing their intervention by consulting with a community advisory board (CAB). Based on the existing research supporting their interventions, the authors believe their intervention enhances condom negotiation skills and reduces the number of sexual partners (Jemmott et al., 2017). Finally, a study assessed the readiness of southern African American men for barbershop-based HIV programs. This is vital in understanding where Black men are willing to engage and can be given information about HIV prevention programs. In expanding the literature, there must be more locations in which information can be distributed at. Additionally, barbershops are a cornerstone of Black male gatherings where it would be easy to provide sexual health information if done in a culturally sensitive and inclusive way. The authors administered surveys to adult African

American males at three barbershops in Alabama. After compiling the data, they discovered that the men were moderately ready for a barbershop-based HIV prevention program. Also, they found that neither engagement in risky sexual behaviors nor the antecedents to engagement in risky sexual behaviors were predictive of readiness for barbershop-based HIV prevention programs (Gardner et al., 2016).

Several studies specifically targeted Black MSM in South Africa. One of these studies had an intervention based on social cognitive theory and qualitative research. The control group did health promotion. The social cognitive theory intervention had six 75-minute modules, with two modules delivered during each of 3 sessions in 3 consecutive weeks; these were delivered in small groups of 9 to 15 men led by a male Xhosa and English-speaking facilitators (Jemmott et al., 2014). This was based on HIV/STI risk-reduction interventions to strengthen behavioral beliefs that support condom use, increase skills and self-efficacy to use condoms and increase HIV/STI risk-reduction knowledge (Jemmott et al., 2014). After a 12-month follow-up, they found that the participants in the intervention group had reported consistent condom use with men and condom use at the last vaginal intercourse than the control group did (Jemmott et al., 2014). In other words, no matter the sexual partner, there was a higher use of condoms meaning there was an increase in condom use and self-efficacy to use condoms.

Another study conducted in South Africa was a six-month pilot program where the researchers trained five community leaders and some staff and provided HIV-prevention information and supplies to Black MSM in Cape Town through small-group meetings, community-based social activities, and inter-community events (Batist et al., 2013). The training for the community leaders included education on STIs and HIV. The program focused on developing leadership skills like effective communication, managing complicated social

situations, strategic planning, goal setting, and encouraging healthy social norms (Batist et al., 2013). These were structured as weekly or bi-weekly meetings held in a safe venue in the townships where the discussions were semi-structured and open in content delivery. The results indicated that the participants reported gaining access to MSM-specific HIV-prevention information, condoms, and water-based lubricant through the small-group meetings. Additionally, an interesting finding was that some participants described how their feelings of loneliness, social isolation, self-esteem, and self-efficacy were improved after taking part in the intervention (Batist et al., 2013).

Jemmott et al. (2017) performed another study with two interventions based on social cognitive theory. The first was Being Responsible Ourselves (BRO), an HIV/STI risk reduction targeting condom use. The other intervention was attention-matched control, targeting physical activity and a healthy diet. The BRO HIV/STI risk reduction intervention was designed to address several aspects of self-efficacy in condom use, improve impulse control related to self-efficacy, and negotiate condom use with sexual partners (Jemmott et al., 2017). The intervention has three 90-minute one-on-one individual sessions implemented across three consecutive weeks by trained facilitators using a standardized manual. Contrary to their thoughts, the BRO intervention did not increase consistent condom use over six and 12-month follow-ups (Jemmott et al., 2017). However, it did reduce receptive anal intercourse compared to their control. The authors speculated a couple of reasons why this mainly occurred related to the men's willingness to engage in the study; their reasons centered on the control and intervention groups' interest in improving sexual impulsivity and self-efficacy use (Jemmott et al., 2017). Their study's results point to social cognitive theory sometimes not being culturally sensitive to Black males when applied generally. The authors were looking at constructs of outcome expectancy and using them

for self-efficacy. Still, they did not apply them to how Black MSM responded to building self-efficacy. Therefore, they found non-significant results between the two groups. This will be further explained in the discussion.

Another intervention utilized for Black MSM was Men of African American Legacy Empowering Self (MAALES). Since other authors developed this, Harawa et al. (2013) only provided a brief overview of the intervention. It was created using collaborating agencies and informed by community advisory board members and extensive formative research; the activities and objectives were guided by the Theory of Reasoned Action and Planned Behavior, Empowerment Theory, Critical Thinking and Cultural Affirmation Model, and social cognitive theory. The goal of MAALES is risk reduction by decreasing the frequency of unprotected intercourse the number of intercourse partners, and reducing sex under the influence of drugs. The MAALES model has six 2-hour small group sessions conducted over three weeks with booster sessions at 6 and 18 weeks post-intervention, all facilitated by two African American males. The results of the 6-month follow-up showed reduced risk behaviors for MAALES but not the control group.

Another study was conducted using CBPR by Tobin et al. (2013). The intervention consisted of six group sessions focused on taking care of self, relationships, and community by viewing videos and group problem-solving discussions to increase knowledge about HIV risk testing and increase motivation to engage in preventative behaviors, among other things. The intervention was created by an advisory board composed of advocates and professionals who served the African American MSM community and community members. They utilized a small-group session that allowed participants to learn from their peers' experiences during the session; participants were able to practice practical skills for sexual negotiations twice a week for two

hours and compared this to a control group where a single facilitator delivered information on health resources. At the 3-month follow-up, participants had a decrease in the number of male sex partners and marginal effects on condom use with male partners and HIV-negative/unknown partners. This means that there was a slight difference between the control and intervention groups, which the authors noted might be due to both groups being exposed to conversations related to their health. There are implications that the simple space to speak about their health made men more comfortable talking about their sexual practices, especially in the intervention group and the control group but not to the same extent. Hence, they found a marginal effect size between the two.

One of the interventions found in the research focused on adolescent Black MSM and having their father communicate with them about HIV and AIDS. The intervention was the Responsible Empowered Aware Living (REAL) Men program. Fathers were given information on communications with their sons about general topics like parental monitoring and specific information about transmission and prevention of HIV and AIDS (Dilorio et al., 2007). The intervention was seven 2-hour sessions with the fathers in a group; however, the last session had fathers and sons attend the group together. At the final follow-up assessment, a significantly higher proportion of adolescents in the HIV group than in the control group indicated that they would delay sexual intercourse until marriage. A lower proportion of sexually active reported that they had CAS (Dilorio et al., 2007).

One study looked at an advertising campaign as an intervention. Testing Makes Us Stronger (TMUS) was a campaign funded by the CDC. Habarta et al. (2017) explored if exposure to the campaign was associated with self-reported HIV testing behaviors at six and 12-month follow-ups. The authors found TMUS exposure was significantly associated with reported

HIV testing behaviors at both the six and 12-month follow-ups (Habarta et al., 2017). The authors noted how the campaign was representative of the target population they were trying to reach, which they believe contributed to the individuals feeling less stigma and pressure around HIV testing behaviors. An example of the campaign materials can be seen in Appendix I.

The next series of studies are evaluations of various interventions. One of the studies was titled RISE, a six-session individual intervention conducted by a counselor with either social work or psychology training. It is based on social cognitive, stress, and coping theories using an ecosystems perspective. It was developed using a community CAB. The counseling sessions focused on the relationship between the person and their social environment (Lauby et al., 2018). In the intervention arm, there were six one-on-one sessions with a trained counselor to address issues about stress//coping, experiences of discrimination, life concerns, and sexual risk behaviors. Intervention participants were significantly more likely than control participants to reduce sexual episodes without condoms with male partners and the number of sexual episodes without condoms for male and female sexual partners (Lauby et al., 2018). One study did a community-based ethnography on the social structural factors that affect acceptance of and adherence to PrEP among Black MSM (Garcia et al., 2015). They found several interventions that could be utilized to address their concerns, including peer navigation, support groups, social networking, and text message reminders (Garcia et al., 2015).

A recent development in queer Black spaces is the House Ball Community (HBC; Hosek et al., 2015). There was a novel intervention called Promoting Ovahness through Safe Sex Education (POSSE). Participants are empowered to use their natural leadership skills to influence their friends and acquaintances to protect themselves from HIV (Hosek et al., 2015). The goal of the study was to raise awareness of the social-cultural factors that influence Black

young men who have sex with men (BYMSM) and increase skills and comfort in starting risk-reduction conversations by using popular opinion leaders (OLs; Hosek et al., 2015). These OL were peers within the community and were trained in groups of 10-12 (50 OLs in the study) for four 2-hour weekly training on sexual behaviors, HIV risk, and stigma surrounding BYMSM. They found that the groups run by the OL had significant declines in multiple sexual partners, CAS with any male partners, and male partners of unknown HIV status compared to the control group. Furthermore, they found that HIV stigma declined for the intervention group, but it was not significant compared to the control group.

Many Men, Many Voices (3MV) addresses social determinants of health (Herbst et al., 2014). This intervention uses small group education and interactions to increase knowledge and change attitudes and behaviors related to HIV/STD risk among BMSM (Herbst et al., 2014). The intervention focuses on helping Black MSM understand social, cultural, and behavioral factors impacting their HIV/STD risk (Herbst et al., 2014). It can be delivered in different ways: a 3-day weekend retreat or seven weekly sessions. During the intervention, two trained peer facilitators ran the sessions with small groups of BMSM. Since this study reports the efficaciousness of the intervention, the authors found, in their examination of the literature, participants in the 3MV interventions reported a 25% greater reduction in the number of male sex partners at the 3-month follow-up, 66% greater reduction in the number of episodes of CAS, and greater consistent condom use during receptive anal receptive sex (Herbst et al., 2014).

Furthermore, there was a meta-analysis that examined interventions for Black MSM. Maulsby et al. (2013) found that eight of the twelve studies included in their review aimed to reduce HIV risk behaviors, and five found a significant reduction in HIV risk behaviors. This would mean that three of the studies did not find a significant decline. This is important to add to

this review because it speaks to some of the earlier studies that did not find substantial results or minor differences. The authors arrived that the best way to change behaviors was through interventions that addressed healthy relationships, relationship dynamics, the social context of HIV risk, and risk reduction (Maulsby et al., 2013).

Several internet-based HIV prevention programs for Latinx and Black MSM were utilized as prevention measures. One was called Keep It UP! (KIU!). KIU! is an online HIV prevention tool created to address the lack of prevention programs for YMSM who are most at risk for HIV infection, which was created by others but cited here in the article (Mustanksi et al., 2013). The authors wanted to examine the acceptability and engagement of KIU! and advance the understanding of measuring participant engagement in eHealth interventions. Related to the former, they found that both Black and Latinx participants found KUI! more engaging, while Black participants also found it valuable and acceptable as an intervention (Madkins et al., 2019). Connected to internet-based programs, a short meta-analysis noted the feasibility of momentary ecological assessment via smartphone apps to address substance use, HIV primary prevention (condom use PrEP), and HIV treatment (medication adherence; Smiley et al., 2020).

Additionally, some authors developed a mobile health platform (eTest) that monitors when HIV self-testing (HST) users open their tests in real-time, so they are connected with "active" follow-up counseling and referrals over the phone (Wray et al., 2020). They had three groups in their experiment over 12 months: (a) HST with post-test phone counseling and referral (eTest condition); (b) HST without active follow-up (standard condition); and (c) reminders to get tested for HIV at a local clinic (control) every three months (Wray et al., 2020). Due to Covid-19 putting a halt to the study, these results are forthcoming and will be available later.

Another study that was done to decrease sexual risk behaviors among Black and Latinx MSM was Project PrEPare. This was a pilot study with a 3-arm design to compare Many Men, Many Voices (3MV) alone, 3MV combined with PrEP (tenofovir/emtricitabine, and 3MV combined with placebo (Hosek et al., 2013). Participants were screened for the arm with PrEP and underwent testing to ensure they could be in it (Hosek et al., 2013). They measured sexual risk behaviors at baseline and then measured every four weeks for 24 weeks. At the end of the study, they found that participants in all arms had lower sexual risk behaviors. Interestingly, the individuals significantly declined PrEP adherence from 63.2% in week 4 to 20% in week 24. Additionally, those in this arm said they would only be interested in taking PrEP if they knew their partner was infected with HIV (Hosek et al., 2013).

Many studies tested or used peer support/peer mentorship interventions to reduce HIV transmission (Dangerfield et al., 2022; Harawa et al., 2020; Jaramillo et al., 2021; Young et al., 2014). One of them was Project HOPE, where they had peer-delivered HIV interventions over Facebook; they had four closed groups (two controls and two HIV intervention groups; Young et al., 2014). The intervention ran over 12 weeks with peer leaders communicating to members through multiple mediums such as groups, Facebook chat, wall posts, and personal messages. The results for the intervention group demonstrated significant positive relations between increased network ties and using social media to discuss sexual behaviors (Young et al., 2014). Another done by Harawa et al. (2020) had a peer mentor who met with participants and took them on field trips which needed to be specified in the article. However, it did state that they went on 15 different outings that were designed to create fun, engaging, and sober activities where participants could socialize with other Black MSM while also providing them with meals at the beginning of each group. While doing these social activities, there was a component of

teaching the members about PrEP, PEP, and STI. In this study, the authors saw an increase from 0 to 22% in PrEP usage and a significant increase in PrEP awareness and STI screening among participants in the peer mentorship intervention compared to the control.

A similar study used the participatory research approach (PRA), where they wanted to develop a social media-based behavioral intervention to facilitate PrEP uptake in young Black and Latinx gay and bisexual men. They designed a 6-week campaign to provide education about PrEP, increase motivation to use PrEP, and facilitate access to PrEP. They used both Facebook and Instagram as platforms for the intervention, and they had two arms in the experiment E-PrEP and E-health (V. V. Patel et al., 2018). They disseminated the information over six weeks in groups led by ten peer leaders who held the groups for the arms. Their results are still in progress at the time of writing due to COVID-19.

Chapter 4: Discussion

Purpose of This Review

The purpose of this review was to provide the reader with ample information regarding HIV as it pertains to Black and Latinx MSM. This review covers information about challenges for PrEP adherence and initiation for Black and Latinx MSM, behaviors that increase HIV transmission specific to Black and Latinx MSM, and effective interventions to reduce HIV transmission risk behaviors for Black and Latinx MSM. After a thorough review, the author aimed to report these findings succinctly to offer it to clinicians, stakeholders, and public health officials with discernible key points. As the results unfolded, it became very apparent that more research has been conducted on Black/African American MSM than Latinx MSM. This might suggest that even researchers have noticed the discrepancy in HIV transmission rates between Latinx and Black men. However, it could also suggest that more research should be conducted on Latinx MSM. Moreover, this could also mean the questions asked in this review could have been more swayed in gathering more information from Black MSM than Latinx MSM. This would mean the questions, in one way or another, were better suited to gathering articles pertaining to Black MSM which is something of note. This discussion section includes more suggestions and critiques to present the current state of the literature and expand the literature and research basis to produce more robust interventions.

Challenges Initiating and Adhering to PrEP for Black and Latinx MSM

For consistency, the discussion will follow the same flow as the results. Regarding Latinx men and their PrEP adherence, it was found that their distinctive factors were related to acculturation and immigration status. Specifically, it was found that the less assimilated they were, the less likely they would have known of PrEP (Crepaz et al., 2021; S. E. Diaz., 2020;

Harkness et al., 2021; Lee et al., 2022; Martinez, 2021; Mimiaga et al., 2015; Painter et al., 2019). The same is true for immigration status: the more recently they had immigrated to the new country, the less likely they would engage in PrEP-seeking or adherent behaviors if the new country were more liberal about gay expression (S. E. Diaz., 2020). Although it was not spoken about in the literature, it should be noted to a large degree how biomedical interventions are typically pushed in bigger cities. Therefore, individuals coming from smaller countries or cities may not have heard of PrEP. Further, there may not be information about PrEP even at the provider level in smaller countries since the issues within smaller communities can be more robust. If Latinx MSM comes from areas where PrEP information is unavailable or unknown, then moving to a place where it is well-known might be more hesitant to initiate PrEP since they have not needed it before or heard of it. This showcases the lack of information and access to services from those from more traditional cultures where same-sex partnerships are not spoken about. Additionally, this highlights the importance of providers creating space for conversations around sexual practices rather than sexual identity since these men are not disclosing their sexuality but will disclose whom they are having sex with.

Also, language is an essential consideration in access to information and PrEP services. It was noted that monolingual Spanish speakers had less knowledge of HIV prevention information and were less aware of PrEP (Painter et al., 2019). This is important to discuss since the language barrier is paramount in understanding why certain men cannot access PrEP. They need the language to convey what they need from their providers (Crepaz et al., 2021; Painter et al., 2019). The studies included in this review did not address to what degree PrEp messaging is accessible and digestible for Spanish speakers, which is worth exploring. If PrEP benefits all MSM, then it should be distributed and information translated into multiple languages. However,

this review only included campaigns to have monolingual Spanish speakers come in for PrEP services, assuming these providers speak Spanish, to address their sexual behaviors. Yet, there was not mention of PrEP as a brand accessible to Spanish speakers. Therefore, it might be worth exploring in a future study how accessible Latinx monolingual Spanish speakers find PrEP information to be.

There were more layered concerns for Black MSM and their PrEP adherence/initiation. It was noted how the providers in the system need to do more to make Black MSM more safe and comfortable speaking about their sexual behaviors (Babel et al., 2021; Dangerfield, Lipson, & Anderson, 2022; Eaton et al., 2017; Elopre et al., 2018; Garcia et al., 2015; Wiginton et al., 2021). This needs to be underscored because many studies noted the importance of being in space with a safe and comfortable provider. Although it was observed more in Black MSM, it does not mean Latinx MSM would not benefit from being in a space and comfortable environment where they talk about their sexual behaviors/practices without judgment. In addition, some Black MSM found the side effects of PrEP to be deterrents in beginning PrEP (Fields et al., 2020; Jaramillo et al., 2021). This is interesting because many of the reasons listed were from the older version of PrEP where there were concerns about bone density and kidney problems; however, these have been, to some degree, remedied by the newer version of PrEP. Thus, as a follow-up to some of these studies, it would be good to check back in with these men to see if they know there are new upgraded versions of PrEP. Also, depending on when the studies were conducted, there might not be any version of PrEP except the version that has been proven to decrease bone density and cause kidney problems. Thus, it was a valid concern when no alternative was addressed in any of the studies looked at in this review. Simultaneously, some studies found a lack of interest in Black men and PrEP since they either thought they did not

need it or believed condoms to be an alternative to PrEP (Algarin et al., 2019; Elopre et al., 2018; Lockard et al., 2019; William & Sallar, 2010). These are all crucial aspects of PrEP initiation for Black MSM because they all point back to a system that is not providing adequate information about PrEP. Since there is not adequate information about PrEP that is easily accessible, Black MSM have moved away from PrEP service conversations. This is only emphasized when the literature points to the stigma within the Black community related to PrEP (Elopre et al., 2018; Jaramillo et al., 2021). As a response to this, there is some ignorance within Black MSM about how PrEP works and HIV/AIDS (Bogart et al., 2010; Fields et al., 2020; Garcia et al., 2015; Jaramillo et al., 2021; Mutchler et al., 2015; Wiginton et al., 2021). This cycle can be dangerous because it breeds ignorance and medical mistrust. For example, Black MSM who do not have adequate information may think taking the pill at any point in time reduces their chance of contracting HIV and may take the pill sparingly, which is not approved to be done in the U.S. Then, they receive the correct information about taking the pill daily, but it could be too late, making them less inclined to listen to their medical providers in the future.

Bringing their challenges together, Black and Latinx MSM have overlapping concerns. The most common for both were low education, lack of employment/income, and inadequate health insurance (Andriano et al., 2022; Assaf et al., 2021; Closson et al., 2018; Crepaz et al., 2021; Eaton et al., 2017; Etowa et al., 2022; Fields et al., 2020; Garcia et al., 2015; German et al., 2017; Ibarra, 2009; Jin et al., 2021; Lee et al., 2022; Montgomery et al., 2021). Since these issues were so pervasive within the literature, it should warrant that more attention be placed on the social determinants of health as it pertains to Black and Latinx MSM. The amount in which these issues contribute to the general lack of access to care and information related to PrEP services at every level of the continuum cannot be overstated. Also, this speaks to a more global

issue of how Black and Latinx MSM have bigger concerns that impede them from being able to initiate PrEP services. It is crucial to reiterate that PrEP services are not free and can be costly; hence, PrEP usage for those who do not receive it for free may be much less in both populations. Since it was out of the scope of this review, it was not addressed to what degree Black and Latinx MSM on PrEP are on it due to having their payments subsidized by a third-party payer. However, this would be worth studying because it would help to understand the gaps between struggling individuals on PrEP medications and those who are not.

Furthermore, it was mentioned how stigma and culturally adaptive delivery methods play a role in PrEP usage for Black and Latinx men. Stigma can be at multiple levels (Babel et al., 2021; Dangerfield et al., 2022; Garcia et al., 2015; Jaramillo et al., 2021). There is a stigma behind starting PrEP, taking PrEP, continuously being on PrEP, and sexual behaviors related to PrEP. This does not even begin to mention the cultural aspects of stigma related to being a Black or Latinx MSM which comes with their own underlying concerns. Unironically, a study noted that the less knowledge about PrEP each group had, the less likely they were to engage in PrEP services (Babel et al., 2021). Comparatively, Black and Latinx MSM generally lack PrEP awareness when looking at other MSM groups (Algarin et al., 2019; Crepaz et al., 2021; Harkness et al., 2021). Thus, the groups not only do not know about PrEP but also there is another layer of folks being disengaged with PrEP due to the lack of information. This means men who could truly benefit from these biomedical interventions are not simply because they are not aware of how beneficial they could be.

HIV Transmission Risk Behaviors for Latinx and Black MSM

There is one issue that continuously shows up in the literature: condomless anal sex (CAS). Many authors noted how imperative CAS is in HIV transmission, but also the risk it

carries in transmitting HIV (Allen et al., 2015; Bedoya et al., 2012; Boyer et al., 2019; Crepaz et al., 2021; Closson et al., 2018; S. E. Diaz., 2020; Djiadeu et al., 2020; Garcia et al., 2015; German et al., 2017; Gómez et al., 2017; Harkness et al., 2021; Ibarra, 2009; Joseph et al., 2018; Kalichman et al., 2017; Kelly et al., 2013; Kelly et al., 2016; Martinez et al., 2016; Muñoz-Laboy & Dodge, 2007; Reback & Larkins, 2013; Rubio Mendoza et al., 2015; Williams & Sallar, 2010; Wilton, 2008; Wohl et al., 2002). This should be further explored since it appeared in many of the studies included in this review. There should be an examination of risk-benefit analysis level thinking for Black and Latinx MSM. In other words, is the reason both are having CAS despite knowing it is the most likely way to contract HIV because they understood the risk, but the experienced pleasure from CAS is worth the risk? Further, if this is the case, it would be interesting to do qualitative research on where the line between the risk outweighs the pleasure of CAS if there is a line between the two. The relationship between sexual pleasure and sexual risk for both should be better understood because it can lead to nuanced interventions where the goal is not centered around reducing partners but rather changing sexual behaviors entirely.

Furthermore, it was noted that even when using condoms, individuals were not using them properly or consistently (Crosby et al., 2015; Duncan et al., 2019; Hergenrather et al., 2016; Kelly et al., 2016; Marks et al., 2009; Montgomery et al., 2021; Reback & Larkins, 2013; Rhodes et al., 2006; Wohl et al., 2002). This is unsurprising since it is common that condoms are not used properly. Also, proper condom usage is not necessarily taught anywhere. Many organizations and providers assume folks know how to use condoms without actually explaining how condoms should be used and when to replace them or that they even expire after so many years.

Building upon sexual risk, it was noted that transaction sex contributed to HIV risk. This varied from study to study; however, the most common exchange of goods was money (Boyer et al., 2019; Ibarra, 2009; Joseph et al., 2018; V. V. Patel et al., 2016; Reback & Larkins, 2013; Rubio Mendoza et al., 2015), clothes (V. V. Patel et al., 2016), and substances/drugs (V. V. Patel et al., 2016; Reback & Larkins, 2013). This echoes back to the previous point mentioned in challenges in adherence to PrEP. Since it was found that both Black and Latinx MSM can struggle with employment and income, it would make sense that some use sex as a medium to gather things they deem necessary. As noted, the most common exchange of goods was money; thus, they are having sex to live essentially, and it is well known that risker sex pays more. Hence, while these men are trying to survive in a difficult-to-navigate society for those who are not as fortunate, they are putting themselves at risk, and they may not even know/it is not foregrounded because of the concern about surviving by any means necessary. Also, it would be crucial to know if these men identify as heterosexual and are using transactional sex versus being queer-identified. This would be important in teasing out how heterosexual and queer men use transactional sex differently to have their needs met, and how that may affect their self-efficacy in condom usage.

Along with CAS, it was noted how multiple sex partners put both Black and Latinx MSM at higher risk for HIV. Some studies reported that Black and Latinx MSM have sex outside of their primary relationship (Boyer et al., 2019; De Santis et al., 2017; Kelly et al., 2013; Kelly et al., 2016; Martinez et al., 2016; Williams & Sallar, 2010). There is some evidence that at least six sexual partners within a six-month period are considered higher-risk behavior (Akin et al., 2008; Djiadeu et al., 2020; Gómez et al., 2017; Lee et al., 2022). Consequently, it has been noted that having more casual sex partners can increase HIV risk (Rosenberg et al., 2011). Something

to evaluate, which is out of the scope of this review, would be if the sexual escapades are serving a purpose in these men's lives. For example, are these men using sex as a means of escape from their own feelings of internalized homophobia, stigma, and cultural expectations not being met? If so, these could be focal points in combating not only CAS but also multiple sex partners since sex is being used as a means to escape.

More research must be done on the association between condom usage and the number of sexual partners. Based on the results mentioned earlier, Black and Latinx MSM are willing to engage in more pleasurable sexual experiences, including unprotected sex, despite the potential risk. It should be re-emphasized how many studies noted CAS for Black and Latinx MSM since it is about one-fifth of the studies used in this review. Additionally, those who use condoms are not using them consistently or correctly. Tying this in with the number of sexual partners, it has been noted that there is a threshold for the number of partners being considered higher risk. However, these are the same individuals who are least likely to use condoms. Therefore, the association and connection to condoms for both groups, especially those with more sexual partners, must be further researched because it is an integral component of HIV transmission reduction.

Another central behavior that was noted in many studies was substance use. Substance use can be tricky since it considers anything from alcohol to methamphetamines. Alcohol influences CAS, making it more likely to happen, along with being known to be a risk for HIV transmission (Allen et al., 2015; Boyer et al., 2019; Hotton et al., 2018; Kelly et al., 2013; Kelly et al., 2016; Reback & Larkins, 2013). Additionally, alcohol can sometimes influence the usage of other substances such as poppers, methamphetamine, and cannabis. Many studies reported the use of previously mentioned substances and their connection to HIV transmission (Bedoya et al.,

2012; Boyer et al., 2019; Higa et al., 2020; Ibarra, 2009; Kelly et al., 2013; Kelly et al., 2016; Lewis & Wilson, 2017; Quinn et al., 2020; Reback & Larkins, 2013). Therefore, it can sometimes be difficult to discern where substances are related to HIV seroconversion since many individuals use substances combined with CAS and other substances. Related to multiple sex partners, substances can be a means to escape. Again, it is not pertinent to this review. However, it would be helpful to know why people are using these substances since they are forthcoming in describing the substances being used. Are substances covering pain or being used as a means of escape for both populations? If not, how are they being used, and if so, what measures can be put into place so that people cannot feel so overwhelmed by their reality?

A study reported that substance use is common among Black MSM (German et al., 2017). Despite a small percentage, 3.6%, of their participants used injection drugs in their lives; 58.5% had used injection drug use in the past six months (Maksut et al., 2020). Moreover, this study found that non-injection drug users were more likely to report using opioids, methamphetamines, and cocaine. This is an essential aspect of substance use for Black MSM because it would mean those engaging in injection drug use are doing so fairly consistently.

Additionally, some studies specifically looked at substance use within Latinx MSM. One study discussed how substance use did not differ between U.S.-born and foreign-born MSM (Mizuno et al., 2015). Yet, they found that foreign-born Latinx MSM binge drank more than U.S.-born Latinx men. According to the authors, this occurred due to years of acculturation and social discrimination. Meaning foreign-born Latinx who spent more time in the U.S. having to assimilate while simultaneously experiencing discrimination drank more than their U.S.-born counterparts. Plus, authors found foreign-born men who had been in the U.S. for at least 15 years were likely to engage in sexual risk behaviors and more likely to be using illicit drugs and binge

drinking, and these results were replicated over a couple of studies (Akin et al., 2008; Ibarra, 2009). This research seems to support the concept related to foreign-born MSM from Latin American countries that are more conservative and engage in previously taboo or frowned upon behaviors. However, it gives a more nuanced understanding of this because despite being in a more liberal country foreign-born Latinx men are still drinking more than their counterparts, and they are seroconverting at higher rates than U.S. Latinx men. One way to explain this would be homophobia and racism experienced within the home country and then re-experienced in the U.S. for foreign-born Latinx men. The study did not address when these men immigrated to the U.S. or for what reason they immigrated which are two very salient questions for this study to understand what is happening in the data.

Finally, it should be reported that internet usage is rapidly increasing, and it is still relatively unclear how it will affect HIV transmission risk. According to V. V. Patel et al. (2016), over 50% of BLMSM use social media, often a mobile device, to seek sex partners. Thus, it can be reasonably inferred that as technology usage continues to expand, more BLMSMs will use social media and apps to find sexual partners. This is important to note, especially for those engaging in CAS, because there is more accessibility to exposure to HIV, specifically when individuals are not reporting as gay or bisexual but engaging in sex with men. Also, the level of accessibility of sexual partners using apps needs to be underscored. These apps allow users access to hundreds of other men in the area with whom they can choose to have sex. As time passes, this will continue to become much more ubiquitous within queer male hook-up culture, and the implications for this are yet to unfold, especially around how interventions will have to look different.

Interventions/Treatments for HIV Reduction for Black and Latinx MSM

Before speaking about novel interventions for each group, it should be noted the common aspects of interventions that were found to be effective. Firstly, an intervention with CBPR or a community-based participatory process in which people from the demographic group are involved in creating the intervention is critical. Secondly, peer support or facilitators from the demographic group to disseminate the information, provide psychoeducation on safer sexual practices/risk of sexual practices, and provide a safe space for participants was equally necessary. Lastly, arguably most important, the intervention focused on reducing sexual behaviors or only one target behavior rather than multiple target outcomes for participants. In other words, interventions with only one sole output did better than those trying to meet various target behaviors. Additionally, focusing on sexual behaviors rather than trying to change men's perspectives or thinking seemed to be more effective in combating HIV.

Since many interventions share the same commonalities, they will be grouped for simplicity. Many interventions had small groups that would give participants information about sexual education. Additionally, these were usually at least an hour long over weeks, where participants had time to implement the information into their lives and bring back questions to their group leader. Further, all the studies followed up with their participants anywhere from 3 months to 1 year. Naturally, most interventions had control groups to compare how well their intervention worked. These comparison groups were typically health-related information being given to the participants. Thus, the comparison group had health-related content given to them about diet, exercise, or bodily health. For some of the interventions, there was no significant difference between sexual health intervention and health-related content. While it is speculative,

this might be due to the general content of health making the participants think about their sexual health.

For Latinx MSM interventions, there were a limited number of them included in this review. Hence, the following will be based on the limited information gathered in this review. The theme of the Latinx MSM interventions was capturing both English and Spanish speakers. The interventions specific to Latinx MSM were called *Latinos en Pareja*, *Sin buscar* excuses, *SOMOS*, and *Mano en Mano*. These all were based on building community with their partner or those around them while providing psychoeducation to reduce risky behaviors. *Mano en Mano* and *Latinos en Pareja* were the only two interventions specifically for Spanish-speaking Latinx men. Since *Mano en Mano* was for individuals and not couples, it targeted migration, social isolation, and migration (Adam et al., 2011). It is exciting that interventions specifically for Latinx MSM are moving towards including both Spanish and English-speaking participants.

These are imperative considerations when doing interventions with Latinx MSM not born in the U.S., especially when considering when they immigrated to the U.S. because their issues will vary based on their stage of life in general and their language skills. It was interesting since none of the other studies looked at the psychosocial impact of these factors and how they contribute, or not, to reasons why some Latinx men are not on PrEP. Also, putting Latinx men born in the U.S. and those not together in interventions would be able to build more connections bilaterally. This could allow U.S. Latinx men to have more connection to their roots/country of origin while providing foreign-born Latinx men more insight into what it is like to be in America and some hurdles they may face. Related to this, there were some implications for identifying as white. One study noted how Latinx men who identified as white were more affluent and more

likely to know about PrEP. It would be interesting to see if these same results could be replicated in America and other countries around the world.

Black MSM included many more interventions, so these will be generally grouped. Some of these interventions include barbershop-based interventions which researchers have found to be a central aspect of Black MSM experiences (Jemmott et al., 2017). Therefore, they are meeting people in a space they find to be safe and secure where it is easily accessible for them to receive information from peers. It was not spelled out throughout the studies how these programs dealt with heterosexual Black men since they too frequent barbershops. Further, it can be reasonably assumed that barbers who participated in the studies were more open about sexuality and cutting queer Black men's hair. Thus, it would be interesting to see how these interventions would be rolled out in more conservative areas where barbers and even patrons may not be as open. Additionally, many of the interventions were based on risk reduction, reducing the number of sexual partners, or increasing self-efficacy for condom usage. There were some interventions based on empowerment or social cognitive theory where the researchers wanted to have clients feel empowered or more informed about their sexual health and options using their social circles (i.e., peers); therefore, Black men within their studies would be more inclined to care about themselves and in turn their sexual health. Many interventions were developed in the community with Black peers' input along with research to be vetted and utilized for the population, which should be used more since, based on this review, leads to higher significance levels for reduced sexual practices.

In closing, some interventions were based on using online platforms to engage BLMSM in lower-risk sexual practices. Again, peer support was instrumental in online engagement because the peer leaders/facilitators would hold virtual groups to disseminate information and

provide psychoeducation on several topics. Additionally, the participants could message each other while providing support through forums. Interestingly, some results only described reducing risk but not speaking to the degree to which the change occurred, whether that be the percentage or number of partners. Online interventions do well in building community and communication with similar people; however, some had not collected data yet for one reason or another and were only speculating on what they believed the results would be. Therefore, while promising, online interventions should be researched more, especially when considering the movement towards more and more technology.

Limitations

There are several limitations to this review. Chief of these would be the discrepancies between the volume of information on Black men versus Latinx men. There were only 23 articles exclusive to Latinx men, while 70 articles exclusive to Black men. This would mean there were almost three times as many articles for Black men as for Latinx men. Therefore, this dissertation, while trying to address both issues for Latinx and Black men, was heavily skewed toward issues about Black men. Additionally, many studies that examined Latinx and Black men had many more Black men than Latinx men. Moreover, some studies looked at the sexual behaviors of MSM and transgender individuals. However, the author made every attempt to isolate data relevant to MSM. Nevertheless, based on the data, inaccurate conclusions could have been drawn at times. Further, most included studies were only reviewed by one researcher, the primary author, making the data vulnerable to unintentional bias by this researcher. However, this does not hurt the validity and rigor of the review, but it should be noted as a limitation.

This review will not evaluate how these methods and interventions facilitate lower sexual risky behavior or HIV transmission rates. This review does not examine mental health related to

HIV transmission risk. In other words, this review does not consider what impacts things like depression, anxiety, and internalized homophobia could have on sexual practices. It will only speak to effective interventions and methods for lowering these rates. Furthermore, it will not cross-examine statistical power between studies; it will look at reductions and not qualify them. Additionally, it will not examine gray literature, which assumedly will not have significant behavioral differences. However, this literature could be rich in some similar interventions not being as effective as found by other authors.

Moreover, this review only has one researcher and primary author. Thus, the data and conclusions in this review are susceptible to unintentional bias. Some other limitations may occur during the data synthesis and analysis process, especially when addressing the research question. Despite these limitations, this review can greatly impact the way Black and Latinx gay and bisexual men can receive help for either preventing HIV or becoming adherent to PrEP medications. It will be able to provide clinicians and the public health field with rich information regarding what type of interventions and treatments work for both sides of the prevention spectrum.

Future Research

Regarding interventions, more research should be devoted to understanding social media interaction. As technology grows, there will be younger and younger generations finding sexual partners using social media and apps. In turn, these could be excellent channels for disseminating information on how to keep oneself safe and, simultaneously, giving young black men who have sex with men information on condoms and PrEP. Moreover, only the future will tell how technology will connect those who test positive or report higher-risk behaviors regularly with someone. For example, if individuals engage in higher-risk behaviors and test negative for HIV,

they could be connected to an online chatting platform with peer support. Additionally, it would be interesting to see how identification could impact interventions in general. Black and Latinx men are not monolithic. Therefore, knowing how different Black and Latinx men relate and respond to interventions could be useful. For example, could Latinx men from Peru have different interventions than those from Mexico, and if they do, what does that look like/mean?

In moving research forward, there could be studies on sexual risk behaviors and mental health. For example, there could be a correlation between lower self-esteem due to depression leading to lower self-efficacy in condom usage. However, in reducing sexual behaviors, these types of results would not be found. Further, it would begin to combat HIV through a more permanent solution rather than just expecting people to change their behaviors. If individuals can change their thinking and relationship to their sexuality, it may elicit a more sustained change in risk behaviors. Extending this point, there could be similar concerns with substance use and internet usage. These correlations and associations should be examined because many studies not included in this review mentioned how these could indicate HIV transmission risk. Still, more research was needed to make such a claim.

Moreover, it should be discussed how more peer support is needed. Based on the research collected in this review, providers were not helpful since they were not asking the right questions or did not understand HIV prevention work. Thus, peer support is where participants felt more comfortable and safer. However, this does not mean that more research cannot be done to bridge providers' knowledge and explore with providers what prevents them from asking the questions that need to be asked since it is a part of their job. Also, providers need to be culturally responsive to sensitive issues, so interventions could be done to facilitate providers having more information on how to address these populations in ways where they feel affirmed and cared for.

It should be mentioned the level of PrEP knowledge and awareness for Black. Many studies noted how both groups did not know much about PrEP or even had conspiracy theories about how HIV/PrEP worked. Thus, there is work/research to understand where these messages are coming from. Perhaps connected research could be done to understand the aversion to condom use and how to bridge knowledge of correct condom usage. It has been noted throughout how not using a condom increases HIV risk; however, it has not been as well studied why people do not like using them outside of not being as pleasurable. This might be connected to something psychological or more intensely related to sexual liberation; more research is needed to understand how public health can keep people safe and informed.

Latinx men should have more integration between English and Spanish speakers while addressing unique issues related to foreign-born Latinx men. Before this, there should be more available research pertaining to Latinx men since they are a rapidly growing demographic in the U.S. Relatedly since queer Latinx men are immigrating to the U.S., it would be important to understand the unique challenges that they may experience while trying to navigate their sexual health. It would be worth researching how Latinx men who are born in the U.S. can provide positive peer support and be influential in assisting them in finding competent sexual health services. Additionally, Latinx men who immigrate to the U.S. could provide Latinx men born in the U.S. support around their culture and language. This has not been explored enough in the literature to discern if a mutually beneficial relationship could develop. Moreover, it may be helpful if future research was to be done in Spanish, where individuals may feel more comfortable expressing themselves since many of the studies are conducted in English.

Finally, more research should be dedicated to Latinx men. As noted throughout this review, not as many articles looked at Latinx men compared to Black men. This was especially

true when it came to interventions. Thus, in moving forward, research should look at Latinx men as a whole and specific group to understand what works best. For example, monolingual Spanish-speaking Latinx might have unique characteristics that make interventions more viable for them in comparison to bilingual Latinx men. Furthermore, it should be examined to what degree the age of immigration affect Latinx men. In other words, does it make a difference related to PrEP adherence or even interventions if Latinx men come to their new country at a young or older age? Extending this point, there should be some level of assimilation considered in further studies to see if this is impacting Latinx men's ability to be receptive to interventions in the first place.

Conclusion

Despite its shortcomings, this integrative systematic review is a cohesive and concise contribution to the literature. Black and Latinx MSM are two communities that continue to be disproportionately affected by HIV, and the findings of this review are a snapshot of how this continues to happen. Understanding the history of the literature has been crucial, and it has allowed future progress to be made toward interventions that have been replicated and efficacious. However, this review hopefully provides a preview into what the past has been and future directions for researchers and policymakers to evoke change within the Black and Latinx communities to continue to reduce HIV transmission rates.

REFERENCES

Adam, B. D., Betancourt, G., & Serrano-Sánchez, A. (2011). Development of an HIV prevention and life skills program for Spanish-speaking gay and bisexual newcomers to Canada. *Canadian Journal of Human Sexuality*, *20*(1/2), 11–17.

Akin, M., Fernández, M. I., Bowen, G. S., & Warren, J. C. (2008). HIV risk behaviors of Latin American and Caribbean men who have sex with men in Miami, Florida, USA. *Revista Panamericana de Salud Pública*, *23*(5), 341-348. http://10.0.6.54/S1020-49892008000500006

Algarin, A. B., Shrader, C. H., Bhatt, C., Hackworth, B. T., Cook, R. L., & Ibañez, G. E. (2019). The pre-exposure prophylaxis (PrEP) continuum of care and correlates to initiation among HIV-negative men recruited at Miami Gay Pride 2018. *Journal of Urban Health*, *96*, 835-844. https://doi.org/10.1007/s11524-019-00362-4

Allen, V. C., Myers, H. F., & Ray, L. (2015). The association between alcohol consumption and condom use: Considering correlates of HIV risk among Black men who have sex with men. *AIDS and Behavior*, *19*, 1689-1700. https://doi.org/10.1007/s10461-015-1075-1

American Psychological Association. (2012). Guidelines for psychological practice with lesbian, gay, and bisexual clients. (2012). *American Psychologist*, *67*(1), 10–42. https://doi.org/10.1037/a0024659

American Psychological Association, APA Task Force on Psychological Practice with Sexual Minority Persons. (2021). *Guidelines for psychological practice with sexual minority persons*. http://www.apa.org/about/policy/psychological-practice-sexual-minority-persons.pdf

Andriano, T. M., Arnsten, J., & Patel, V. V. (2022). Social determinants of health and HIV Pre-Exposure Prophylaxis (PrEP) interest and use among young Black and Latinx sexual minority men. *PLoS ONE*, *17*(4), 1–9. https://doi.org/10.1371/journal.pone.0267031

Assaf, R. D., Konda, K. A., Torres, T. S., Vega-Ramirez, E. H., Elorreaga, O. A., Diaz-Sosa, D., Diaz, S. D., Pimenta, C., Robles, R., Medina-Mora, M. E., Grinsztejn, B., Caceres, C., & Veloso, V. G. (2021). Are men who have sex with men at higher risk for HIV in Latin America more aware of PrEP? *PLoS ONE*, *16*(8), 1–15. http://10.0.5.91/journal.pone.0255557

Babel, R. A., Wang, P., Alessi, E. J., Raymond, H. F., & Wei, C. (2021). Stigma, HIV risk, and access to HIV prevention and treatment services among men who have sex with men (MSM) in the United States: A scoping review. *AIDS and Behavior, 25,* 3574–3604. https://doi.org/10.1007/s10461-021-03262-4

Batist, E., Brown, B., Scheibe, A., Baral, S. D., & Bekker, L. G. (2013). Outcomes of a community-based HIV-prevention pilot programme for township men who have sex with men in Cape Town, South Africa. *Journal of the International AIDS Society*, *16 Suppl 3*. https://doi.org/10.7448/ias.16.4.18754

Bedoya, C. A., Mimiaga, M. J., Beauchamp, G., Donnell, D., Mayer, K. H., & Safren, S. A. (2012). Predictors of HIV transmission risk behavior and seroconversion among Latino men who have sex with men in Project EXPLORE. *AIDS and Behavior*, *16*(3), 608–617. https://doi.org/10.1007/s10461-011-9911-4

Berg, M.B., Mimiaga, M.J., & Safren, S.A. (2008). Mental health concerns of gay and bisexual men seeking mental health services. *Journal of Homosexuality, 54*(3), 293–306. https://doi.org/10.1080/00918360801982215

Bogart, L. M., Wagner, G., Galvan, F. H., & Banks, D. (2010). Conspiracy beliefs about HIV are related to antiretroviral treatment nonadherence among African American men with HIV. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *53*(5), 648–655. https://doi.org/10.1097/QAI.0b013e3181c57dbc

Bostwick, W. B., Boyd, C. J., Hughes, T. L., & McCabe, S. E. (2010). Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States. *American Journal of Public Health*, *100*(3), 468-475. https://doi.org/10.2105/AJPH.2008.152942

Boyer, C. B., Greenberg, L., Korelitz, J., Harper, G. W., Stewart-Campbell, R., Straub, D., Sanders, R., Reid, L.-H., Futterman, D., Lee, S., & Ellen, J. M. (2019). Sexual partner characteristics, relationship type, and HIV risk among a community venue–based sample of urban adolescent and young adult men who have sex with men. *Youth & Society*, *51*(2), 219–246. https://doi.org/10.1177/0044118X16669259

Brown, E. (2005). We wear the mask: African American contemporary gay male identities. *Journal of African American Studies, 9*, 29–38. https://doi.org/10.1007/s12111-005-1020-x

Castel, A. D., Wilbourn, B., Trexler, C., D'Angelo, L. D., & Greenberg, D. (2021). A digital gaming intervention to improve HIV testing for adolescents and young adults: Protocol for development and a pilot randomized controlled trial. *JMIR Research Protocols*, *10*(6). https://doi.org/10.2196/29792

Centers for Disease Control and Prevention. (2019, October 31). *HIV cost-effectiveness*. https://www.cdc.gov/hiv/programresources/guidance/costeffectiveness/index.html

Chan, R., Operario, D., & Mak, W. (2020). Bisexual individuals are at greater risk of poor mental health than lesbians and gay men: The mediating role of sexual identity stress at multiple levels. *Journal of Affective Disorders*, *260*, 292–301. https://doi.org/10.1016/j.jad.2019.09.020

Chandler, C. (2018). *Psychosocial associations of biobehavioral HIV prevention among Black men who have sex with men in the United States* [Doctoral dissertation, University of Pittsburgh]. http://d-scholarship.pitt.edu/34408/

Closson, K., Smith, R. V, Olarewaju, G., & Crosby, R. (2018). Associations between economic dependence, sexual behaviours, and sexually transmitted infections among young, Black, gay, bisexual and other men who have sex with men living with and without HIV in Jackson, Mississippi, USA. *Sexual Health*, *15*(5), 473–476. https://doi.org/10.1071/SH17218

Cochran, S. D., & Mays, V. M. (2008). Prevalence of primary mental health morbidity and suicide symptoms among gay and bisexual men. In R. J. Wolitski, R. Stall, & R. O. Valdiserri (Eds.), *Unequal opportunity: Health disparities affecting gay and bisexual men in the United States* (pp. 97–120). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195301533.003.0004

Crepaz, N., Mullins, M. M., Higa, D., Gunn, J. K. L., & Salabarría-Peña, Y. (2021). A rapid review of disparities in HIV prevention and care outcomes among Hispanic/Latino men who have sex with men in the United States. *AIDS Education and Prevention*, *33*(4), 276–289. https://doi.org/10.1521/aeap.2021.33.4.276

Crosby, R., Mena, L., Yarber, W. L., Graham, C. A., Sanders, S. A., & Milhausen, R. R. (2015). Condom use errors and problems: A comparative study of HIV-positive versus HIV-

negative young black men who have sex with men. *Sexually Transmitted Diseases*, *42*(11), 634–636. https://doi.org/10.1097/OLQ.0000000000000356

Dangerfield, D. T., Anderson, J. N., Wylie, C., Arrington-Sanders, R., Bluthenthal, R. N., Beyrer, C., & Farley, J. E. (2022). Refining a multicomponent intervention to increase perceived HIV risk and PrEP initiation: Focus group study among Black sexual minority men. *JMIR Formative Research*, *6*(8). https://doi.org/10.2196/34181

Dangerfield, D. T., Lipson, A., & Anderson, J. N. (2022). HIV prep clinician communication preferences among Black sexual minority men. *AIDS Education and Prevention*, *34*(2), 168–181. https://doi.org/10.1521/aeap.2022.34.2.168

De Santis, J., Provencio-Vasquez, E., Mata, H. J., Mancera, B., De Santis, J. P., Provencio-D'Augelli, A. R., Grossman, A. H., & Starks, M. T. (2006). Childhood gender atypicality, victimization, and PTSD among lesbian, gay, and bisexual youth. *Journal of Interpersonal Violence, 21*(11), 1462–1482. https://doi.org/10.1177/0886260506293482

Vasquez, E., Mata, H. J., & Mancera, B. (2017). A comparison of sexual relationships among Hispanic men by sexual orientation: Implications for HIV/STI prevention. *Sexuality & Culture*, *21*(3), 692–702. https://doi.org/10.1007/s12119-017-9410-5

Desrosiers, A., Levy, M., Dright, A., Zumer, M., Jallah, N., Kuo, I., Magnus, M., & Siegel, M. (2019). A randomized controlled pilot study of a culturally-tailored counseling intervention to increase uptake of HIV pre-exposure prophylaxis among young Black men who have sex with men in Washington, DC. *AIDS and Behavior*, *23*(1), 105–115. https://doi.org/10.1007/s10461-018-2264-5

Diaz, J. E., Schrimshaw, E. W., Tieu, H. V., Nandi, V., Koblin, B. A., & Frye, V. (2020). Acculturation as a moderator of HIV risk behavior correlates among Latino men who

have sex with men. *Archives of Sexual Behavior*, *49*(6), 2029–2043. https://doi.org/10.1007/s10508-019-01604-x

Díaz, R. M., Ayala, G., Bein, E., Henne, J., & Marin, B. V. (2001). The impact of homophobia, poverty, and racism on the mental health of gay and bisexual Latino men: Findings from 3 US cities. *American Journal of Public Health*, *91*(6), 927–932. https://doi.org/10.2105/ajph.91.6.927

DiIorio, C., McCarty, F., Resnicow, K., Lehr, S., & Denzmore, P. (2007). REAL men: A group-randomized trial of an HIV prevention intervention for adolescent boys. *American Journal of Public Health*, *97*(6), 1084–1089. https://doi.org/10.2105/AJPH.2005.073411

Djiadeu, P., Smith, M. D. R., Kushwaha, S., Odhiambo, A. J., Absalom, D., Husbands, W., Tharao, W., Regan, R., Sa, T., Zhang, N., Kaul, R., & Nelson, L. E. (2020). Social, clinical, and behavioral determinants of HIV infection and HIV testing among Black men in Toronto, Ontario: A classification and regression tree analysis. *Journal of the International Association of Providers of AIDS Care*, *19*, 2325958220934613. https://doi.org/10.1177/2325958220934613

Dodge, B., Herbenick, D., Friedman, M. R., Schick, V., Fu, T.-C J., Bostwick, W., Bartelt, E., Munoz-Laboy, M., Pletta, D., Reece, M., & Sandfort, T. G. M. (2016). Attitudes toward bisexual men and women among a nationally representative probability sample of adults in the United States. *PLoS One, 11*(10), e0164430. https://doi.org/10.1371/journal.pone.0164430

Driver, R., Allen, A. M., Finneran, S., Maksut, J. L., Eaton, L. A., & Kalichman, S. C. (2021). Masculine ideology and Black men who have sex with men's interest in HIV pre-

exposure prophylaxis (PrEP). *Journal of Health Psychology*, *26*(14), 2908–2920. https://doi.org/10.1177/1359105320941236

Duncan, D. T., Hickson, D. A., Goedel, W. C., Callander, D., Brooks, B., Chen, Y.-T., Hanson, H., Eavou, R., Khanna, A. S., Chaix, B., Regan, S. D., Wheeler, D. P., Mayer, K. H., Safren, S. A., Melvin, S. C., Draper, C., Magee-Jackson, V., Brewer, R., & Schneider, J. A. (2019). The social context of HIV prevention and care among black men who have sex with men in three U.S. cities: The neighborhoods and networks (N2) cohort study. *International Journal of Environmental Research and Public Health*, *16*(11). https://doi.org/10.3390/ijerph16111922

Eaton, L. A., Driffin, D. D., Bauermelster, J., Smith, H., & Conway-Washington, C. (2015). Minimal awareness and stalled uptake of pre-exposure prophylaxis (PrEP) among at risk, HIV-negative, Black men who have sex with men. *AIDS Patient Care and STDs*, *29*(8), 423–430. https://doi.org/10.1089/apc.2014.0303

Eaton, L. A., Matthews, D. D., Driffin, D. D., Bukowski, L., Wilson, P. A., & Stall, R. D. (2017). A multi-US city assessment of awareness and uptake of pre-exposure prophylaxis (PrEP) for HIV prevention among Black men and transgender women who have sex with men. *Prevention Science*, *18*(5), 505–516. https://doi.org/10.1007/s11121-017-0756-6

Elopre, L., McDavid, C., Brown, A., Shurbaji, S., Mugavero, M. J., & Turan, J. M. (2018). Perceptions of HIV pre-exposure prophylaxis among young, black men who have sex with men. *AIDS Patient Care and STDs*, *32*(12), 511-518. https://doi.org/10.1089/apc.2018.0121

Etowa, J., Omorodion, F., Mbagwu, I., Etowa, E., & Ghose, B. (2022). Understanding the factors associated with HIV and STIs diagnosis among Black heterosexual men in Ottawa and

Windsor, Ontario. *Journal of Public Health Research*, *11*(2), 7–13. http://10.0.15.241/jphr.2022.2048

Fields, E. L., Hussen, S. A., & Malebranche, D. J. (2020). Mind the gap: HIV prevention among young Black men who have sex with men. *Current HIV/AIDS Reports*, *17*(6), 632–642. https://doi.org/10.1007/s11904-020-00532-z

Friedman, M. R., Stall, R., Silvestre, A. J., Mustanski, B., Shoptaw, S., Surkan, P. J., Rinaldo, C. R., & Plankey, M. W. (2014). Stuck in the middle. *JAIDS: Journal of Acquired Immune Deficiency Syndromes, 66*(2), 213–220. https://doi.org/10.1097/QAI.0000000000000143

Garcia, J., Colson, P. W., Parker, C., & Hirsch, J. S. (2015). Passing the baton: Community-based ethnography to design a randomized clinical trial on the effectiveness of oral pre-exposure prophylaxis for HIV prevention among Black men who have sex with men. *Contemporary Clinical Trials*, *45*(Pt. B), 244–251. https://doi.org/10.1016/j.cct.2015.10.005

Gardner, A. (2016). *Exploring risky sexual behaviors of southern African American men and their readiness for barbershop-based HIV prevention programs* [Doctoral dissertation, University of Alabama] (UMI No. 10162692). Proquest Dissertations & Theses.

Garofalo, R., Mustanski, B., Johnson, A., & Emerson, E. (2010). Exploring factors that underlie racial/ethnic disparities in HIC risk among young men who have sex with men. *Journal of Urban Health*, *87*(2). http://10.0.3.239/s11524-009-9430-z

German, D., Brady, K., Kuo, I., Opoku, J., Flynn, C., Patrick, R., Park, J. N., Adams, J., Carroll, M., Simmons, R., Smith, C. R., & Davis, W. W. (2017). Characteristics of Black men who have sex with men in Baltimore, Philadelphia, and Washington, D.C.: Geographic

diversity in socio-demographics and HIV transmission risk. *Journal of Acquired Immune Deficiency Syndromes*, *75*, S296–S308. https://doi.org/10.1097/QAI.0000000000001425

Gilead. (2019). *U.S. Food and Drug Administration approves Descovy® for HIV pre-exposure prophylaxis (PrEP*). https://www.gilead.com/news-and-press/press-room/press-releases/2019/10/us-food-and-drug-administration-approves-descovy-for-hiv-preexposure-prophylaxis-prep

Gilman, S. E., Cochran, S. D., Mays, V. M., Hughes, M., Ostrow, D., & Kessler, R. C. (2001). Risk of psychiatric disorders among individuals reporting same-sex sexual partners in the National Comorbidity Survey. *American Journal of Public Health, 91*(6), 933–939. https://doi.org/10.2105/ajph.91.6.933

Goldin C. S. (1994). Stigmatization and AIDS: Critical issues in public health. *Social Science & Medicine (1982)*, *39*(9), 1359–1366. https://doi.org/10.1016/0277-9536(94)90366-2

Gómez, F., Barrientos, J., & Cárdenas, M. (2017). Relation between HIV status, risky sexual behavior, and mental health in an MSM sample from three Chilean cities. *Revista Panamericana de Salud Pública, 41,* 1–7.

Guilamo-Ramos, V., Thimm-Kaiser, M., Benzekri, A., Chacón, G., López, O. R., Scaccabarrozzi, L., & Rios, E. (2020). The invisible US Hispanic/Latino HIV crisis: Addressing gaps in the national response. *American Journal of Public Health*, *110*(1), 27–31. https://doi.org/10.2105/AJPH.2019.305309

Habarta, N., Boudewyns, V., Badal, H., Johnston, J., Uhrig, J., Green, D., Ruddle, P., Rosenthal, J., & Stryker, J. E. (2017). CDC's Testing Makes Us Stronger (TMUS) campaign: Was campaign exposure associated with HIV testing behavior among Black gay and bisexual

men? *AIDS Education and Prevention*, *29*(3), 228–240. https://doi.org/10.1521/aeap.2017.29.3.228

Harawa, N. T., Greenland, S., Bingham, T. A., Johnson, D. F., Cochran, S. D., Cunningham, W. E., Celentano, D. D., Koblin, B. A., LaLota, M., MacKellar, D. A., & Valleroy, L. A. (2004). Associations of race/ethnicity with hiv prevalence and HIV-related behaviors among young men who have sex with men in 7 urban centers in the United States. *Journal of Acquired Immune Deficiency Syndromes*, *35*(5), 526–536. https://doi.org/10.1097/00126334-200404150-00011

Harawa, N. T., Schrode, K. M., McWells, C., Weiss, R. E., Hilliard, C. L., & Bluthenthal, R. N. (2020). Small randomized controlled trial of the New Passport to Wellness HIV Prevention intervention for Black men who have sex with men (BMSM). *AIDS Education and Prevention : Official Publication of the International Society for AIDS Education*, *32*(4), 311–324. https://doi.org/10.1521/aeap.2020.32.4.311

Harawa, N. T., Williams, J. K., McCuller, W. J., Ramamurthi, H. C., Lee, M., Shapiro, M. F., Norris, K. C., & Cunningham, W. E. (2013). Efficacy of a culturally congruent HIV risk-reduction intervention for behaviorally bisexual black men: Results of a randomized trial. *AIDS*, *27*(12), 1979–1988. https://doi.org/10.1097/QAD.0b013e3283617500

Harkness, A., Satyanarayana, S., Mayo, D., Smith-Alvarez, R., Rogers, B. G., Prado, G., & Safren, S. A. (2021). Scaling up and out HIV prevention and behavioral health services to Latino sexual minority men in South Florida: Multi-level implementation barriers, facilitators, and strategies. *AIDS Patient Care and STDs*, *35*(5), 167–179. https://doi.org/10.1089/apc.2021.0018

Herbst, J. H., Painter, T. M., Tomlinson, H. L., & Alvarez, M. E. (2014). Evidence-based HIV/STD prevention intervention for black men who have sex with men. *MMWR Supplements*, *63*(1), 21–27.

Herek, G. M. (1999). AIDS and stigma. *American Behavioral Scientist*, *42*(7), 1106–1116. https://doi.org/10.1177/0002764299042007004

Hergenrather, K. C., Emmanuel, D., Durant, S., & Rhodes, S. D. (2016). Enhancing HIV prevention among young men who have sex with men: A systematic review of HIV behavioral interventions for young gay and bisexual men. *AIDS Education and Prevention*, *28*(3), 252–271. https://doi.org/10.1521/aeap.2016.28.3.252

Hess, K. L., Hu, X., Lansky, A., Mermin, J., & Hall, H. I. (2017). Lifetime risk of a diagnosis of HIV infection in the United States. *Annals of Epidemiology*, *27*(4), 238–243. https://doi.org/10.1016/j.annepidem.2017.02.003

Higa, D. H., Crepaz, N., McDonald, C. M., Adegbite-Johnson, A., Deluca, J. B., Kamitani, E., & Sipe, T. A. (2020). HIV prevention research on men who have sex with men: A scoping review of systematic reviews, 1988–2017. *AIDS Education and Prevention*, *32*(1), 1–24. https://doi.org/10.1521/aeap.2020.32.1.1

HIV.Gov. (2017, September 1). *HIV prevention activities*. https://www.hiv.gov/federal-response/federal-activities-agencies/hiv-prevention-activities

Hong, Q. N., Gonzalez-Reyes, A., & Pluye, P. (2018). Improving the usefulness of a tool for appraising the quality of qualitative, quantitative and mixed methods studies, the Mixed Methods Appraisal Tool (MMAT). *Journal of Evaluation in Clinical Practice*, *24*(3), 459–467. https://doi.org/10.1111/jep.12884

Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy*, *48*(1), 9–16. https://doi.org/10.1037/a0022186

Hosek, S. G., Lemos, D., Hotton, A. L., Fernandez, M. I., Telander, K., Footer, D., & Bell, M. (2015). An HIV intervention tailored for black young men who have sex with men in the House Ball Community. *AIDS Care*, *27*(3), 355–362. http://10.0.4.56/09540121.2014.963016

Hosek, S. G., Siberry, G., Bell, M., Lally, M., Kapogiannis, B., Green, K., Fernandez, M. I., Rutledge, B., Martinez, J., Garofalo, R., & Wilson, C. M. (2013). The acceptability and feasibility of an HIV preexposure prophylaxis (PrEP) trial with young men who have sex with men. *Journal of Acquired Immune Deficiency Syndromes (1999)*, *62*(4), 447–456. https://doi.org/10.1097/QAI.0b013e3182801081

Hotton, A. L., Keene, L., Corbin, D. E., Schneider, J., & Voisin, D. R. (2018). The relationship between Black and gay community involvement and HIV-related risk behaviors among Black men who have sex with men. *Journal of Gay & Lesbian Social Services*, *30*(1), 64–81. http://10.0.4.56/10538720.2017.1408518

Hussen, S. A., Camp, D. M., Wondmeneh, S. B., Doraivelu, K., Holbrook, N., Moore, S. J., Colasanti, J. A., Ali, M. K., & Farber, E. W. (2021). Mental health service utilization among young Black gay, bisexual, and other men who have sex with men in HIV care: A retrospective cohort study. *AIDS Patient Care and STDs*, *35*(1), 9–14. https://doi.org/10.1089/apc.2020.0202

Ibarra, J. G. (2009). *HIV among young Latino men in the San Diego-Tijuana border region* [Doctoral dissertation, UC Berkeley]. https://escholarship.org/uc/item/1xp9w50x

Jaramillo, J., Pagkas-Bather, J., Waters, K., Shackelford, L. B., Campbell, R. D., Henry, J., Grandberry, V., Ramirez, L. F., Cervantes, L., Stekler, J., Andrasik, M. P., & Graham, S. M. (2021). Perceptions of sexual risk, prep services, and peer navigation support among HIV-negative Latinx and black men who have sex with men (MSM) residing in western Washington. *Sexuality Research and Social Policy, 19*(3), 1058-1068. https://doi.org/10.1007/s13178-021-00595-6

Jeffries, W. L., Flores, S. A., Rooks-Peck, C. R., Gelaude, D. J., Belcher, L., Ricks, P. M., & Millett, G. A. (2021). Experienced homophobia and HIV infection risk among U.S. gay, bisexual, and other men who have sex with men: A meta-analysis. *LGBT Health*, *8*(1), 1–10. https://doi.org/10.1089/lgbt.2020.0274

Jemmott, J. B. 3rd, Jemmott, L. S., O'Leary, A., Ngwane, Z., Icard, L. D., Heeren, G. A., Mtose, X., & Carty, C. (2014). Cluster-randomized controlled trial of an HIV/sexually transmitted infection risk-reduction intervention for South African men. *American Journal of Public Health*, *104*(3), 467–473. https://doi.org/10.2105/AJPH.2013.301578

Jemmott, L. S., Jemmott, J. B., Lanier, Y., Thompson, C., & Baker, J. L. (2017). Development of a barbershop-based HIV/STI Risk reduction intervention for young heterosexual African American men. *Health Promotion Practice*, *18*(1), 110–118. http://10.0.4.153/1524839916662601

Jin, H., Biello, K. B., Garofalo, R., Lurie, M., Sullivan, P. S., Stephenson, R., & Mimiaga, M. J. (2021). HIV treatment cascade and prep care continuum among serodiscordant male couples in the united states. *AIDS and Behavior*. https://doi.org/10.1007/s10461-021-03315-8

Joseph, H. A., Pan, Y., Mendoza, M., Harawa, N. T., Lauby, J., Hosek, S. G., Bluthenthal, R. N., Milnamow, M., Fernandez, M. I., Jeffries, W. L., Belcher, L., & Millett, G. A. (2018). HIV acquisition and transmission potential among African American men who have sex with men and women in three US cities. *Archives of Sexual Behavior*, *47*(1), 183–194. https://doi.org/10.1007/s10508-017-1052-z

Kalichman, S. C., Price, D., Eaton, L. A., Burnham, K., Sullivan, M., Finneran, S., Cornelius, T., & Allen, A. (2017). Diminishing perceived threat of AIDS and increasing sexual risks of HIV among men who have sex with men, 1997–2015. *Archives of Sexual Behavior*, *46*(4), 895–902. https://doi.org/10.1007/s10508-016-0934-9

Kelly, J. A., St Lawrence, J. S., Tarima, S. S., DiFranceisco, W. J., & Amirkhanian, Y. A. (2016). Correlates of sexual HIV risk among African American men who have sex with men. *American Journal of Public Health*, *106*(1), 96–102. https://doi.org/10.0.8.57/AJPH.2015.302945

Kelly, J. A., St. Lawrence, J. S., Amirkhanian, Y. A., DiFranceisco, W. J., Anderson-Lamb, M., Garcia, L. I., & Nguyen, M. T. (2013). Levels and predictors of HIV risk behavior among Black men who have sex with men. *AIDS Education and Prevention*, *25*(1), 49-61. https://doi.org/10.1521/aeap.2013.25.1.49

Koblin, B. A., Mayer, K. H., Eshleman, S. H., Wang, L., Mannheimer, S., del Rio, C., Shoptaw, S., Magnus, M., Buchbinder, S., Wilton, L., Liu, T.-Y., Cummings, V., Piwowar-Manning, E., Fields, S. D., Griffith, S., Elharrar, V., & Wheeler, D. (2013). Correlates of HIV acquisition in a cohort of Black men who have sex with men in the United States: HIV prevention trials network (HPTN) 061. *PloS One*, *8*(7), e70413. https://doi.org/10.1371/journal.pone.0070413

Lauby, J., Milnamow, M., Joseph, H. A., Hitchcock, S., Carson, L., Pan, Y., Mendoza, M., & Millett, G. (2018). Evaluation of Project RISE, an HIV prevention intervention for Black bisexual men using an ecosystems approach. *AIDS and Behavior*, *22*(1), 164–177. https://doi.org/10.1007/s10461-017-1892-5

Lee, J. J., Herrera, J. A., Cardona, J., Cruz, L. Y., Munguia, L., Leyva Vera, C. A., & Robles, G. (2022). Culturally tailored social media content to reach Latinx immigrant sexual minority men for HIV prevention: Web-based feasibility study. *JMIR Formative Research*, *6*(3). https://doi.org/10.2196/36446

Levy, M. E., Wilton, L., Phillips, G. 2nd, Glick, S. N., Kuo, I., Brewer, R. A., Elliott, A., Watson, C., & Magnus, M. (2014). Understanding structural barriers to accessing HIV testing and prevention services among black men who have sex with men (BMSM) in the United States. *AIDS and Behavior*, *18*(5), 972–996. https://doi.org/10.1007/s10461-014-0719-x

Lewis, N. M., & Wilson, K. (2017). HIV risk behaviours among immigrant and ethnic minority gay and bisexual men in North America and Europe: A systematic review. *Social Science & Medicine*, *179*, 115–128. https://doi.org/10.1016/j.socscimed.2017.02.033

Linley, L., Johnson, A.S., Song, R., Hu, S., Wu, B., Hall, H.I., Hernandez, A., & Friend, M. (2023). Estimated HIV incidence and prevalence in the United States 2017–2021. *HIV Surveillance Supplemental Report*, *28*(3). https://www.cdc.gov/hiv/library/reports/hiv-surveillance/vol-28-no-3/index.html

Liu, Y., Bleasdale, J., Przybyla, S., Higgins, M. C., & Zhang, C. (2022). Racial variations in psychosocial vulnerabilities linked to differential poppers use and associated HIV-related outcomes among young men who have sex with men: A study in two U.S. metropolitan

areas. *Substance Use & Misuse*, *57*(4), 560–568. http://10.0.4.56/10826084.2021.2023185

Lockard, A., Rosenberg, E. S., Sullivan, P. S., Kelley, C. F., Serota, D. P., Rolle, C.-P. M., Luisi, N., Pingel, E., & Siegler, A. J. (2019). Contrasting self-perceived need and guideline-based indication for HIV pre-exposure prophylaxis among young, black men who have sex with men offered pre-exposure prophylaxis in Atlanta, Georgia. *AIDS Patient Care and STDs*, *33*(3), 112–119. https://doi.org/10.1089/apc.2018.0135

Madkins, K., Moskowitz, D. A., Moran, K., Dellucci, T. V, & Mustanski, B. (2019). Measuring acceptability and engagement of the Keep It Up! internet-based HIV prevention randomized controlled trial for young men who have sex with men. *AIDS Education and Prevention: Official Publication of the International Society for AIDS Education*, *31*(4), 287–305. https://doi.org/10.1521/aeap.2019.31.4.287

Maksut, J. L., Gicquelais, R. E., Jackman, K.-M., Eaton, L. A., Friedman, M. R., Matthews, D. D., Bukowski, L. A., & Stall, R. D. (2020). Injection drug use, unknown HIV positive status, and self-reported current prep use among Black men who have sex with men attending US Black pride events, 2014–2017. *Drug and Alcohol Dependence*, *207*. https://doi.org/10.1016/j.drugalcdep.2019.107808

Marks, G., Millett, G. A., Bingham, T., Bond, L., Lauby, J., Liau, A., Murrill, C. S., & Stueve, A. (2009). Understanding differences in HIV sexual transmission among Latino and Black men who have sex with men: The Brothers y Hermanos Study. *AIDS and Behavior*, *13*(4), 682–690. https://doi.org/10.1007/s10461-008-9380-6

Martinez, O. (2021). A review of current strategies to improve HIV prevention and treatment in sexual and gender minority Latinx (SGML) communities. *Expert Review of Anti-Infective Therapy*, *19*(3), 323–329. https://doi.org/10.1080/14787210.2020.1819790

Martinez, O., Arreola, S., Wu, E., Muñoz-Laboy, M., Levine, E. C., Rutledge, S. E., Hausmann-Stabile, C., Icard, L., Rhodes, S. D., Carballo-Diéguez, A., Rodríguez-Díaz, C. E., Fernandez, M. I., & Sandfort, T. (2016). Syndemic factors associated with adult sexual HIV risk behaviors in a sample of Latino men who have sex with men in New York City. *Drug & Alcohol Dependence*, *166*, 258–262. http://10.0.3.248/j.drugalcdep.2016.06.033

Martinez, O., Wu, E., Frasca, T., Shultz, A. Z., Fernandez, M. I., López Rios, J., Ovejero, H., Moya, E., Chavez Baray, S., Capote, J., Manusov, J., Anyamele, C. O., López Matos, J., Page, J. S. H., Carballo-Diéguez, A., & Sandfort, T. G. M. (2017). Adaptation of a couple-based HIV/STI prevention intervention for Latino men who have sex with men in New York City. *American Journal of Men's Health*, *11*(2), 181–195. https://doi.org/10.1177/1557988315579195

Maulsby, C., Millett, G., Lindsey, K., Kelley, R., Johnson, K., Montoya, D., & Holtgrave, D. (2014). HIV among Black men who have sex with men (MSM) in the United States: A review of the literature. *AIDS and Behavior, 18*(1), 10–25. https://doi.org/10.1007/s10461-013-0476-2

Maulsby, C., Millett, G., Lindsey, K., Kelley, R., Johnson, K., Montoya, D., & Holtgrave, D. (2013). A systematic review of HIV interventions for black men who have sex with men (MSM). *BMC Public Health*, *13*, 625. https://doi.org/10.1186/1471-2458-13-625

Mereish, E. H., Katz-Wise, S. L., & Woulfe, J. (2017). Bisexual-specific minority stressors, psychological distress, and suicidality in bisexual individuals: The mediating role of

loneliness. *Prevention Science: The Official Journal of the Society for Prevention Research, 18*(6), 716–725. https://doi.org/10.1007/s11121-017-0804-2

Millett, G. A., Peterson, J. L., Wolitski, R. J., & Stall, R. (2006). Greater risk for HIV infection of black men who have sex with men: A critical literature review. *American Journal of Public Health*, *96*(6), 1007–1019. https://doi.org/10.2105/AJPH.2005.066720

Mimiaga, M. J., Biello, K. B., Robertson, A. M., Oldenburg, C. E., Rosenberger, J. G., O'Cleirigh, C., Novak, D. S., Mayer, K. H., & Safren, S. A. (2015). High prevalence of multiple syndemic conditions associated with sexual risk behavior and HIV infection among a large sample of Spanish- and Portuguese-speaking men who have sex with men in Latin America. *Archives of Sexual Behavior*, *44*(7), 1869–1878. https://doi.org/10.1007/s10508-015-0488-2

Mizuno, Y., Borkowf, C. B., Ayala, G., Carballo-Diéguez, A., & Millett, G. A. (2015). Correlates of sexual risk for HIV among US-born and foreign-born Latino men who have sex with men (MSM): An analysis from the Brothers y Hermanos study. *Journal of Immigrant and Minority Health*, *17*(1), 47–55. https://doi.org/10.1007/s10903-013-9894-5

Montgomery, M. C., Ellison, J., Chan, P. A., Harrison, L., & Van Den Berg, J. J. (2021). Sexual satisfaction with daily oral HIV pre-exposure prophylaxis (PrEP) among gay and bisexual men at two urban PrEP clinics in the United States: An observational study. *Sexual Health*, *18*(4), 319–326. https://doi.org/10.1071/SH20207

Muessig, K. E., Baltierra, N. B., Pike, E. C., LeGrand, S., & Hightow-Weidman, L. B. (2014). Achieving HIV risk reduction through healthmpowerment.org, a user-driven ehealth

intervention for young black men who have sex with men and transgender women who have sex with men. *Digital Culture & Education*, *6*(3), 164–182.

Muessig, K. E., Pike, E. C., Fowler, B., Legrand, S., Parsons, J. T., Bull, S. S., Wilson, P. A., Wohl, D. A., & Hightow-Weidman, L. B. (2013). Putting prevention in their pockets: Developing mobile phone-based HIV interventions for black men who have sex with men. *AIDS Patient Care and STDs*, *27*(4), 211–222. https://doi.org/10.1089/apc.2012.0404

Muñoz-Laboy, M., & Dodge, B. (2007). Bisexual Latino men and HIV and sexually transmitted infections risk: An exploratory analysis. *American Journal of Public Health*, *97*(6), 1102–1106. http://10.0.8.57/AJPH.2005.078345

Mustanski, B. S., Garofalo, R., & Emerson, E. M. (2010). Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *American Journal of Public Health, 100*(12), 2426–2432. https://doi.org/10.2105/AJPH.2009.178319

Mustanski, B., Garofalo, R., Monahan, C., Gratzer, B., & Andrews, R. (2013). Feasibility, acceptability, and preliminary efficacy of an online HIV prevention program for diverse young men who have sex with men: The Keep it Up! intervention. *AIDS and Behavior, 17*(9), 2999–3012. https://doi.org/10.1007/s10461-013-0507-z

Mutchler, M. G., McDavitt, B., Ghani, M. A., Nogg, K., Winder, T. J. A., & Soto, J. K. (2015). Getting PrEPared for HIV prevention navigation: Young Black gay men talk about HIV prevention in the biomedical era. *AIDS Patient Care & STDs*, *29*(9), 490–502. http://10.0.4.65/apc.2015.0002

Nelson, K., Gamarel, K., Eaton, L., Nelson, K. M., Eaton, L. A., & Gamarel, K. E. (2017). Preferences for condomless sex in sexually explicit media among Black/African American men who have sex with men: Implications for HIV prevention. *Archives of Sexual Behavior*, *46*(4), 977–985. http://10.0.3.239/s10508-016-0878-0

O'Donnell, L., Stueve, A., Joseph, H. A., & Flores, S. (2014). Adapting the voices HIV behavioral intervention for Latino men who have sex with men. *AIDS and Behavior*, *18*(4), 767–775. https://doi.org/10.1007/s10461-013-0653-3

Oldenburg, C. E., Perez-Brumer, A. G., Reisner, S. L., & Mimiaga, M. J. (2015). Transactional sex and the HIV epidemic among men who have sex with men (MSM): Results from a systematic review and meta-analysis. *AIDS and Behavior*, *19*(12), 2177–2183. https://doi.org/10.1007/s10461-015-1010-5

Painter, T. M., Song, E. Y., Mullins, M. M., Mann-Jackson, L., Alonzo, J., Reboussin, B. A., & Rhodes, S. D. (2019). Social support and other factors associated with HIV testing by Hispanic/Latino gay, bisexual, and other men who have sex with men in the U.S. South. *AIDS and Behavior*, *23*, 251–265. https://doi.org/10.1007/s10461-019-02540-6

Parsons, J. T., Millar, B. M., Moody, R. L., Starks, T. J., Rendina, H. J., & Grov, C. (2017). Syndemic conditions and HIV transmission risk behavior among HIV-negative gay and bisexual men in a US national sample. *Health Psychology*, *36*(7), 695–703. https://doi.org/10.1037/hea0000509

Patel, P., Borkowf, C. B., Brooks, J. T., Lasry, A., Lansky, A., & Mermin, J. (2014). Estimating per-act HIV transmission risk: A systematic review. *AIDS*, *28*(10), 1509–1519. https://doi.org/10.1097/QAD.0000000000000298

Patel, V. V., Ginsburg, Z., Golub, S. A., Horvath, K. J., Rios, N., Mayer, K. H., Kim, R. S., & Arnsten, J. H. (2018). Empowering with PrEP (E-PrEP), a peer-led social media-based intervention to facilitate HIV preexposure prophylaxis adoption among young black and Latinx gay and bisexual men: Protocol for a cluster randomized controlled trial. *JMIR Research Protocols*, *7*(8), e11375. https://doi.org/10.2196/11375

Patel, V. V., Masyukova, M., Sutton, D., Horvath, K., Patel, V. V, & Horvath, K. J. (2016). Social media use and HIV-related risk behaviors in young Black and Latino gay and bi men and transgender individuals in New York City: Implications for online interventions. *Journal of Urban Health*, *93*(2), 388–399. http://10.0.3.239/s11524-016-0025-1

Pitasi, M. A., Beer, L., Cha, S., Lyons, S. J., Hernandez, A. L., Prejean, J., Valleroy, L. A., Crim, S. M., Trujillo, L., Hardman, D., Painter, E. M., Petty, J., Mermin, J. H., Daskalakis, D. C., & Hall, H. I. (2021). Vital signs: HIV infection, diagnosis, treatment, and prevention among gay, bisexual, and other men who have sex with men - United States, 2010-2019. *Morbidity and Mortality Weekly Report*, *70*(48), 1669–1675. https://doi.org/10.15585/MMWR.MM7048E1

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., Britten, N., Roen, K., & Duffy, S. (2006). *Guidance on the conduct of narrative synthesis in systematic reviews.* https://www.lancaster.ac.uk/media/lancaster-university/content-assets/documents/fhm/dhr/chir/NSsynthesisguidanceVersion1-April2006.pdf

Quinn, B., Gorbach, P. M., Okafor, C. N., Heinzerling, K. G., & Shoptaw, S. (2020). Investigating possible syndemic relationships between structural and drug use factors, sexual HIV transmission and viral load among men of colour who have sex with men in

Los Angeles County. *Drug and Alcohol Review*, *39*(2), 116–127. https://doi.org/10.1111/dar.13026

Reback, C. J., & Larkins, S. (2013). HIV risk behaviors among a sample of heterosexually identified men who occasionally have sex with another male and/or a transwoman. *Journal of Sex Research*, *50*(2), 151–163. https://doi.org/10.1080/00224499.2011.632101

Rhodes, S. D., Yee, L. J., & Hergenrather, K. C. (2006). A community-based rapid assessment of HIV behavioural risk disparities within a large sample of gay men in southeastern USA: A comparison of African American, Latino and white men. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *18*(8), 1018–1024. https://doi.org/10.1080/09540120600568731

Rosenberg, E. S., Sullivan, P. S., Dinenno, E. A., Salazar, L. F., & Sanchez, T. H. (2011). Number of casual male sexual partners and associated factors among men who have sex with men: Results from the National HIV Behavioral Surveillance system. *BMC Public Health*, *11*. https://doi.org/10.1186/1471-2458-11-189

Rubio Mendoza, M. L., Jacobson, J. O., Morales-Miranda, S., Sierra Alarcón, C. Á., & Luque Núñez, R. (2015). High HIV burden in men who have sex with men across Colombia's largest cities: Findings from an integrated biological and behavioral surveillance study. *PLoS ONE*, *10*(8), 1–15. http://10.0.5.91/journal.pone.0131040

Russell, S. T., & Joyner, K. (2001). Adolescent sexual orientation and suicide risk: Evidence from a national study. *American Journal of Public Health, 91*(8), 1276–1281. https://doi.org/10.2105/ajph.91.8.1276

Sallabank, G., Blackburn, N. A., Threats, M., Pulley, D. V., Barry, M. C., LeGrand, S., Harper, G. W., Bauermeister, J. A., Hightow-Weidman, L. B., & Muessig, K. E. (2022). Media

representation, perception and stigmatisation of race, sexuality and HIV among young black gay and bisexual men. *Culture, Health & Sexuality*, *24*(12), 1729–1743. https://doi.org/10.1080/13691058.2021.2008506

Sánchez, F. J., Blas-Lopez, F. J., Martínez-Patiño, M. J., & Vilain, E. (2016). Masculine consciousness and anti-effeminacy among Latino and white gay men. *Psychology of Men & Masculinity, 17*(1), 54–63. https://doi.org/10.1037/a0039465

Schackman, B. R., Fleishman, J. A., Su, A. E., Berkowitz, B. K., Moore, R. D., Walensky, R. P., Becker, J. E., Voss, C., Paltiel, A. D., Weinstein, M. C., Freedberg, K. A., Gebo, K. A., & Losina, E. (2015). The lifetime medical cost savings from preventing HIV in the United States. *Medical Care, 53*(4), 293–301. https://doi.org/10.1097/MLR.0000000000000308

Smiley, S. L., Milburn, N. G., Nyhan, K., & Taggart, T. (2020). A systematic review of recent methodological approaches for using ecological momentary assessment to examine outcomes in U.S. based HIV research. *Current HIV/AIDS Reports*, *17*(4), 333–342. https://doi.org/10.1007/s11904-020-00507-0

Spaan, P., van Luenen, S., Garnefski, N., & Kraaij, V. (2020). Psychosocial interventions enhance HIV medication adherence: A systematic review and meta-analysis. *Journal of Health Psychology*, *25*(10–11), 1326–1340. https://doi.org/10.1177/1359105318755545

Storholm, E. D., Siconolfi, D. E., Halkitis, P. N., Moeller, R. W., Eddy, J. A., & Bare, M. G. (2013). Sociodemographic factors contribute to mental health disparities and access to services among young men who have sex with men in New York City. *Journal of Gay & Lesbian Mental Health*, *17*(3), 294-313. https://doi.org/10.1080/19359705.2012.763080

Takada, S., Gorbach, P., Brookmeyer, R., & Shoptaw, S. (2021). Associations of social capital resources and experiences of homophobia with HIV transmission risk behavior and HIV

care continuum among men who have sex with men in Los Angeles. *AIDS Care*, *33*(5), 663–674. https://doi.org/10.1080/09540121.2020.1828798

Tobin, K., Kuramoto, S. J., German, D., Fields, E., Spikes, P. S., Patterson, J., & Latkin, C. (2013). Unity in diversity: Results of a randomized clinical culturally tailored pilot HIV prevention intervention trial in Baltimore, Maryland, for African American men who have sex with men. *Health Education & Behavior*, *40*(3), 286–295. https://doi.org/10.1177/1090198112452125

Tran, H., Saleem, K., Lim, M., Chow, E., Fairley, C. K., Terris-Prestholt, F., & Ong, J. J. (2021). Global estimates for the lifetime cost of managing HIV. *AIDS, 35*(8), 1273–1281. https://doi.org/10.1097/QAD.0000000000002887

Truvada. (2020). *Learn about TRUVADA® (emtricitabine 200 mg and tenofovir disoproxil fumarate 300 mg).* https://www.Truvada.com/

UNAIDS. (2021, October 18). *HIV medicines price reductions can be achieved.* https://www.unaids.org/en/resources/presscentre/featurestories/2021/october/20211018_hiv-medicines-price-reductions-can-be-achieved

Valdiserri R. O. (2002). HIV/AIDS stigma: An impediment to public health. *American Journal of Public Health*, *92*(3), 341–342. https://doi.org/10.2105/ajph.92.3.341

Vega, M. Y., Spieldenner, A. R., DeLeon, D., Nieto, B. X., & Stroman, C. A. (2011). SOMOS: Evaluation of an HIV prevention intervention for Latino gay men. *Health Education Research*, *26*(3), 407–418. https://doi.org/10.1093/her/cyq068

Watkins, T., Simpson, C., Cofield, S., Davies, S., Kohler, C., & Usdan, S. (2016). The relationship between HIV Risk, high-risk behavior, religiosity, and spirituality among

Black men who have sex with men (MSM): An exploratory study. *Journal of Religion & Health*, *55*(2), 535–548. http://10.0.3.239/s10943-015-0142-2

Whitfield, D. L. (2020). Does internalized racism matter in HIV risk? Correlates of biomedical HIV prevention interventions among Black men who have sex with men in the United States. *AIDS Care*, *32*(9), 1116–1124. http://10.0.4.56/09540121.2020.1753007

Wiginton, J. M., Eaton, L. A., Watson, R. J., Maksut, J. L., Earnshaw, V. A., & Berman, M. (2021). Sex-positivity, medical mistrust, and prep conspiracy beliefs among hiv-negative cisgender black sexual minority men in Atlanta, Georgia. *Archives of Sexual Behavior*, *51*(5), 2571–2581. https://doi.org/10.1007/s10508-021-02174-7

Williams, P. B., & Sallar, A. M. (2010). HIV/AIDS and African American men: Urban-rural differences in sexual behavior, HIV knowledge, and attitudes toward condom use. *Journal of the National Medical Association*, *102*(12), 1139–1149. https://doi.org/10.1016/S0027-9684(15)30768-9

Wilson, T. E., Gousse, Y., Joseph, M. A., Browne, R. C., Camilien, B., McFarlane, D., Mitchell, S., Brown, H., Urraca, N., Romeo, D., Johnson, S., Salifu, M., Stewart, M., Vavagiakis, P., & Fraser, M. (2019). HIV Prevention for Black heterosexual men: The barbershop talk with brothers cluster randomized trial. *American Journal of Public Health*, *109*(8), 1131–1137. http://10.0.8.57/AJPH.2019.305121

Wilton, L. (2008). Correlates of substance use in relation to sexual behavior in Black gay and bisexual men: Implications for HIV prevention. *Journal of Black Psychology*, *34*(1), 70–93. https://doi.org/10.1177/0095798407310536

Wohl, A. R., Johnson, D. F., Lu, S., Jordan, W., Beall, G., Currier, J., & Simon, P. A. (2002). HIV risk behaviors among African American men in Los Angeles County who self-

identify as heterosexual. *Journal of Acquired Immune Deficiency Syndromes*, *31*(3), 354–360. https://doi.org/10.1097/00126334-200211010-00013

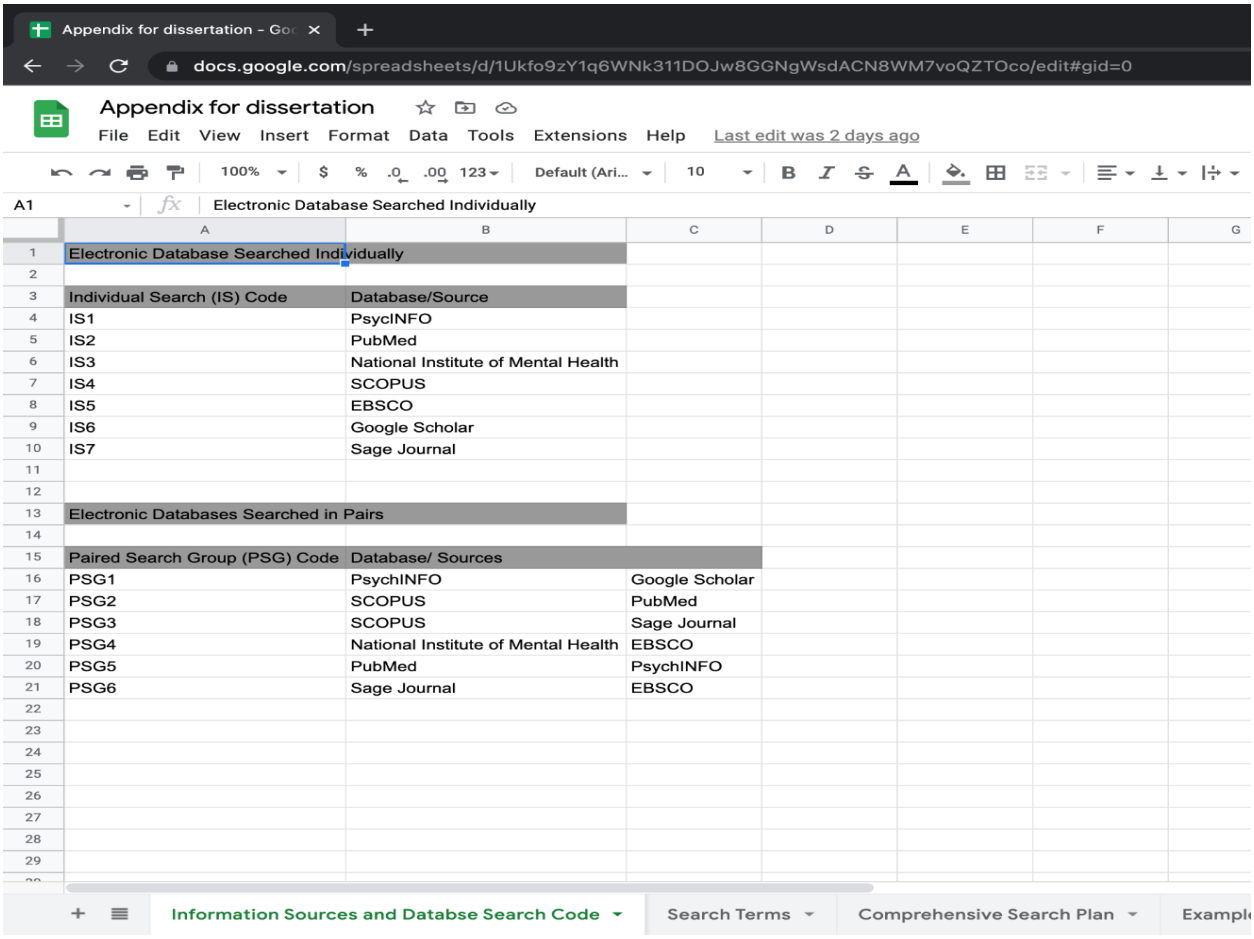
World Health Organization. (2022, July). *The Global Health Observatory: HIV/AIDS.* https://www.who.int/data/gho/data/themes/hiv-aids - :~:text=Globally, 37.7 million %5B30.2–,considerably between countries and regions

Wray, T. B., Chan, P. A., Klausner, J. D., Mena, L. A., Brock, J. B., Simpanen, E. M., Ward, L. M., & Chrysovalantis, S. (2020). ETest: A limited-interaction, longitudinal randomized controlled trial of a mobile health platform that enables real-time phone counseling after HIV self-testing among high-risk men who have sex with men. *Trials*, *21*(1). https://doi.org/10.1186/s13063-020-04554-1

Young, S. D., Holloway, I., Jaganath, D., Rice, E., Westmoreland, D., & Coates, T. (2014). Project HOPE: Online social network changes in an HIV prevention randomized controlled trial for African American and Latino men who have sex with men. *American Journal of Public Health*, *104*(9), 1707–1712. https://doi.org/10.2105/AJPH.2014.301992

APPENDIX A

Information Sources and Database Search Codes



	A	B	C
1	Electronic Database Searched Individually		
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3	Individual Search (IS) Code	Database/Source	
4	IS1	PsycINFO	
5	IS2	PubMed	
6	IS3	National Institute of Mental Health	
7	IS4	SCOPUS	
8	IS5	EBSCO	
9	IS6	Google Scholar	
10	IS7	Sage Journal	
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13	Electronic Databases Searched in Pairs		
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15	Paired Search Group (PSG) Code	Database/ Sources	
16	PSG1	PsychINFO	Google Scholar
17	PSG2	SCOPUS	PubMed
18	PSG3	SCOPUS	Sage Journal
19	PSG4	National Institute of Mental Health	EBSCO
20	PSG5	PubMed	PsychINFO
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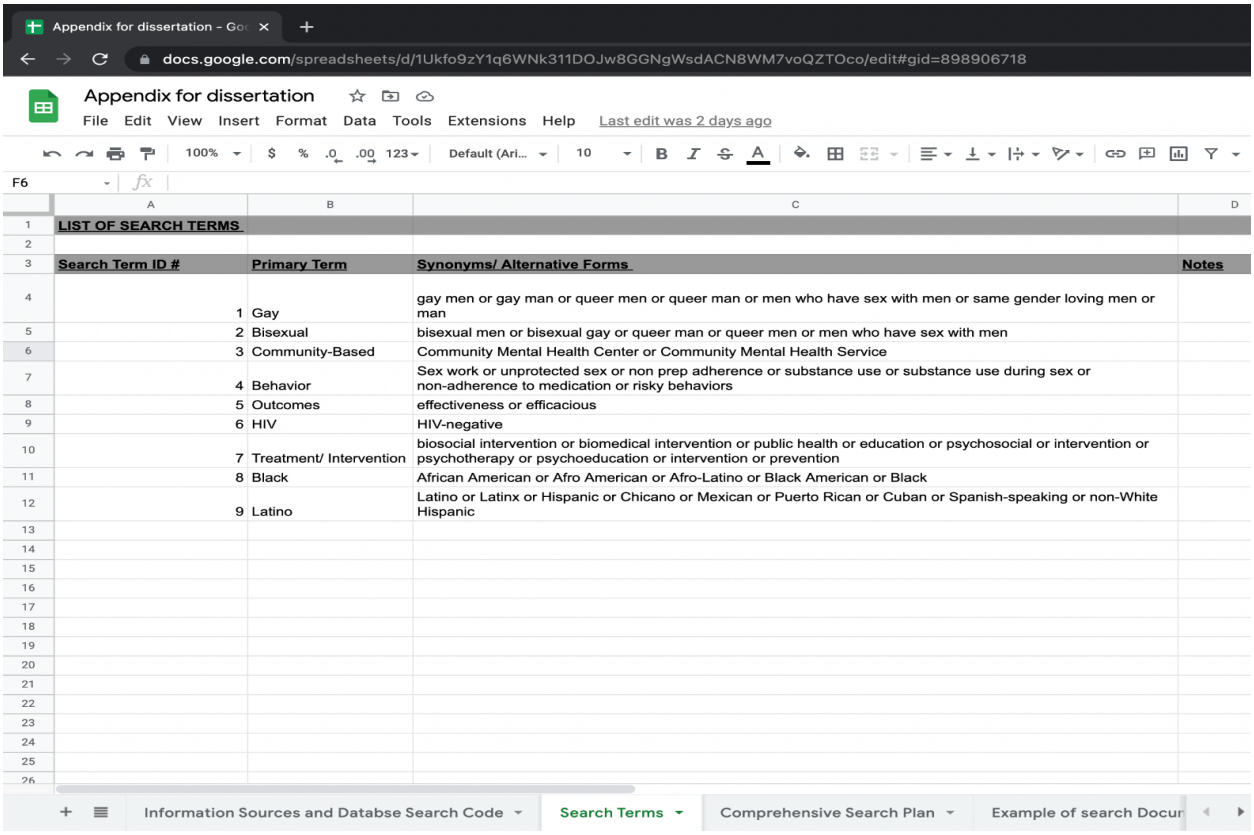
APPENDIX B

Search Terms



Appendix for dissertation - Goo

docs.google.com/spreadsheets/d/1Ukfo9zY1q6WNk311DOJw8GGNgWsdACN8WM7voQZTOco/edit#gid=898906718

Appendix for dissertation

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	A	B	C	D
1	**LIST OF SEARCH TERMS**			
2				
3	**Search Term ID #**	**Primary Term**	**Synonyms/ Alternative Forms**	**Notes**
4	1	Gay	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man	
5	2	Bisexual	bisexual men or bisexual gay or queer man or queer men or men who have sex with men	
6	3	Community-Based	Community Mental Health Center or Community Mental Health Service	
7	4	Behavior	Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors	
8	5	Outcomes	effectiveness or efficacious	
9	6	HIV	HIV-negative	
10	7	Treatment/ Intervention	biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention	
11	8	Black	African American or Afro American or Afro-Latino or Black American or Black	
12	9	Latino	Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	
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Information Sources and Databse Search Code | Search Terms | Comprehensive Search Plan | Example of search Docur

APPENDIX C

Comprehensive Search Plan

Search Type	Database of Source	Search Term ID(s)	Search Syntax or Instructions	Fields to Search	Specifiers
Electronic Database	IS1	01, 02, 04, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex and non-adherence to medication or risky behaviors, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS1	01, 02, 04, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex and non-adherence to medication or risky behaviors, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS2	01, 02, 04, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS2	01, 02, 04, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and African American or Afro	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

			American or Afro-Latino or Black American or Black		
Electronic Database	IS3	01, 02, 04, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
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Electronic Database	IS5	01, 02, 04, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
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Electronic Database	IS6	01, 02, 04, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

Electronic Database	IS7	01, 02, 04, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS7	01, 02, 04, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and Sex work or unprotected sex or non prep adherence or substance use or substance use during sex or non-adherence to medication or risky behaviors, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS1	01, 02, 06, 07, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and HIV-negative, and biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS1	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, and biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

Electronic Database	IS2	01, 02, 06, 07, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, and biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or prevention, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS2	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS3	01, 02, 06, 07, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS3	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

Electronic Database	IS4	01, 02, 06, 07, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual gay or queer man or queer men or men who have sex with men, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or prevention, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS4	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
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Electronic Database	IS5	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

Electronic Database	IS6	01, 02, 06, 07, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS6	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS7	01, 02, 06, 07, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS7	01, 02, 06, 07, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and HIV-negative, biosocial intervention or biomedical intervention or public health or education or psychosocial or intervention or psychotherapy or psychoeducation or intervention or prevention, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

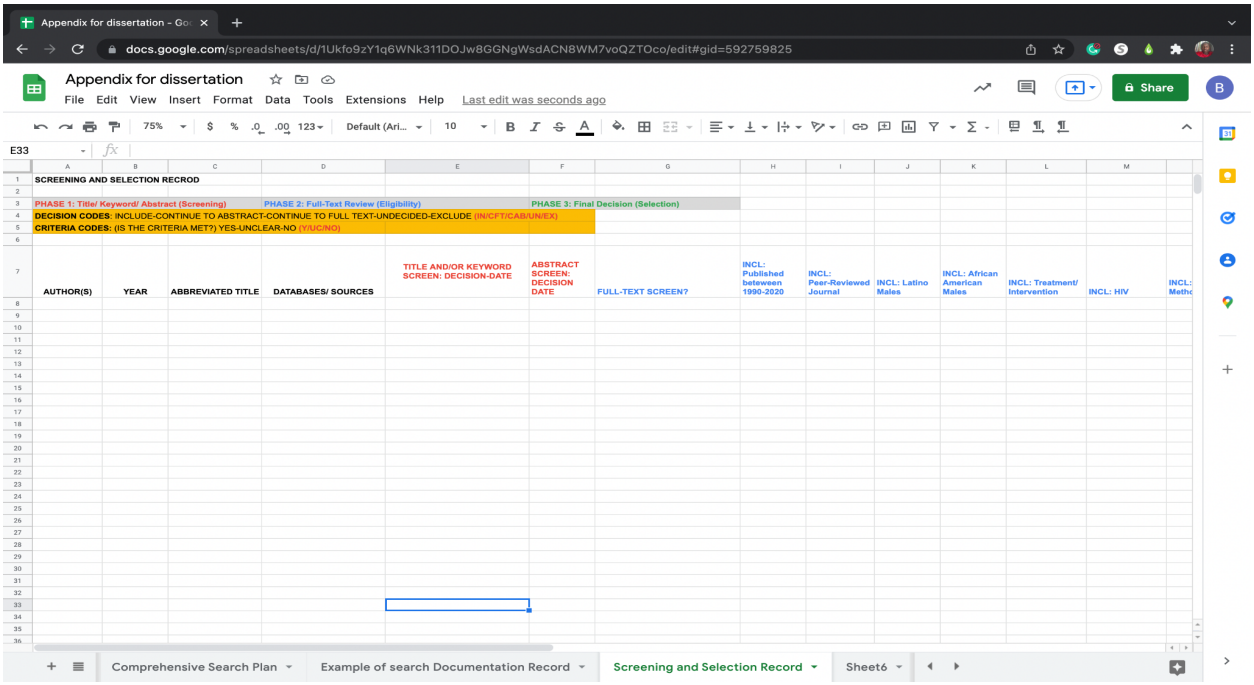
Electronic Database	IS1	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS1	01, 02, 03, 05, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	lS2	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2021; Type: Peer-Reviewed Articles Only
Electronic Database	IS2	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	lS3	01, 02, 03, 05, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

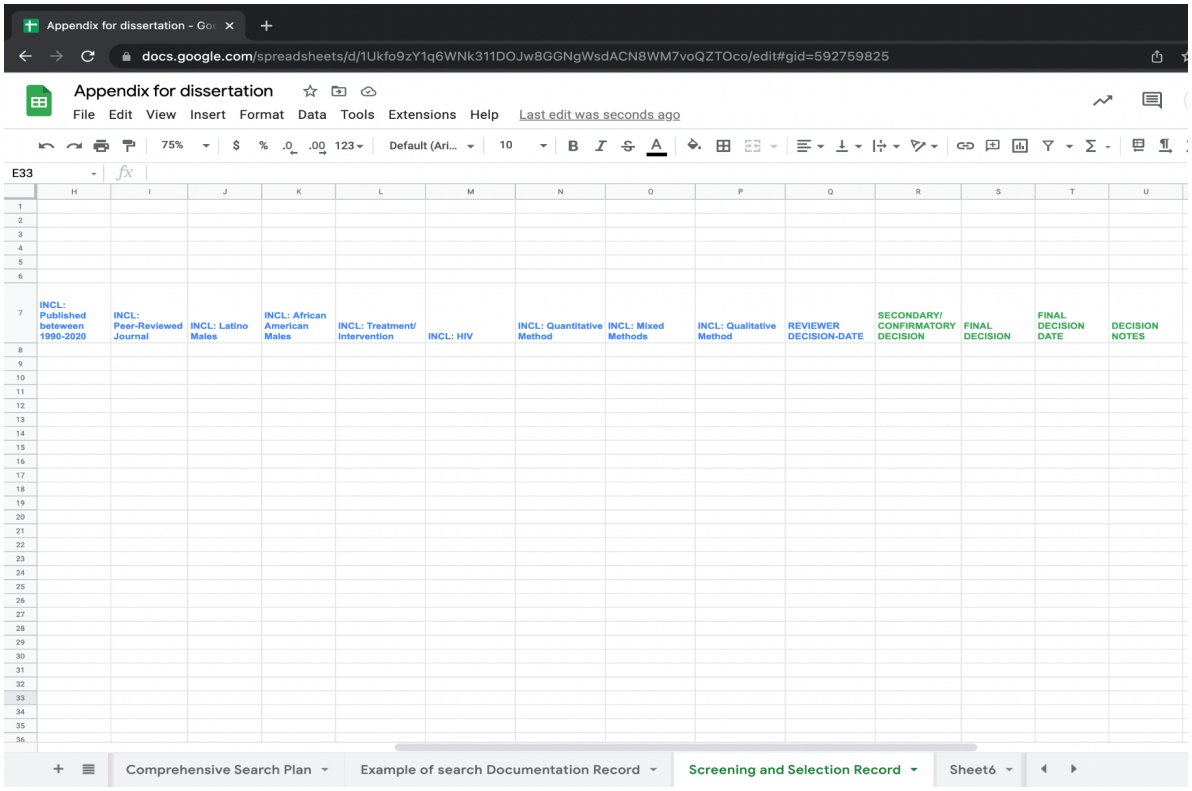
Electronic Database	IS3	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, Community Mental Health Center or Community Mental Health Service, effectiveness or efficacious, African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS4	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual,Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS4	01, 02, 03, 05, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS5	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, Community Mental Health Center or Community Mental Health Service, and effectiveness or efficaciousn, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS5	01, 02, 03, 05, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

Electronic Database	IS6	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS6	01, 02, 03, 05, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS7	01, 02, 03, 05, 08	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and African American or Afro American or Afro-Latino or Black American or Black	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only
Electronic Database	IS7	01, 02, 03, 05, 09	gay men or gay man or queer men or queer man or men who have sex with men or same gender loving men or man, bisexual men or bisexual, and Community Mental Health Center or Community Mental Health Service, and effectiveness or efficacious, and Latino or Latinx or Hispanic or Chicano or Mexican or Puerto Rican or Cuban or Spanish-speaking or non-White Hispanic	Title, Keywords, Abstract	Years: 2001-2022; Type: Peer-Reviewed Articles Only

APPENDIX D

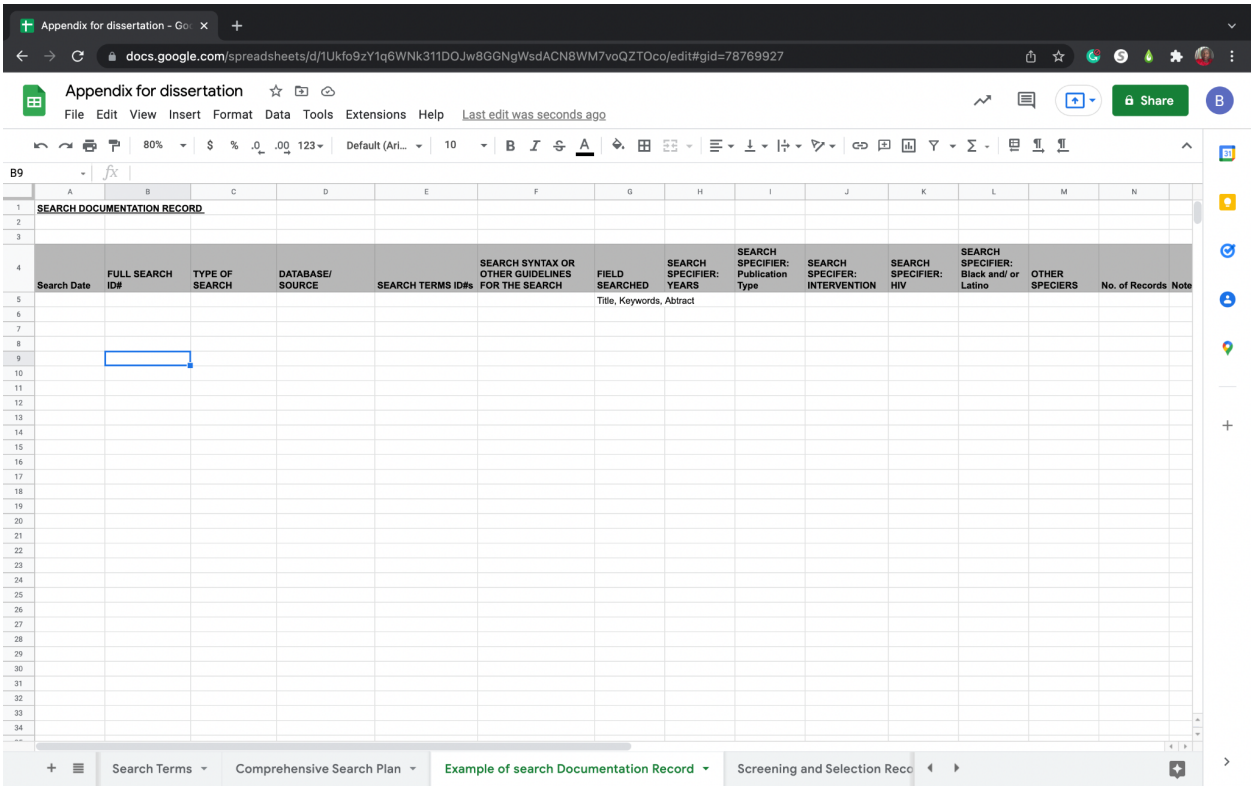
Screening and Selection Record





APPENDIX E

Search Documentation Record



Appendix for dissertation - Go

docs.google.com/spreadsheets/d/1Ukfo9zY1q6WNk311DOJw8GGNgWsdACN8WM7voQZTOco/edit#gid=78769927

Appendix for dissertation

File Edit View Insert Format Data Tools Extensions Help Last edit was seconds ago

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B9

SEARCH DOCUMENTATION RECORD

Search Date	FULL SEARCH ID#	TYPE OF SEARCH	DATABASE/ SOURCE	SEARCH TERMS ID#s	SEARCH SYNTAX OR OTHER GUIDELINES FOR THE SEARCH	FIELD SEARCHED	SEARCH SPECIFIER: YEARS	SEARCH SPECIFIER: Publication Type	SEARCH SPECIFER: INTERVENTION	SEARCH SPECIFIER: HIV	SEARCH SPECIFIER: Black and/ or Latino	OTHER SPECIERS	No. of Records	Note
						Title, Keywords, Abtract								

Search Terms | Comprehensive Search Plan | Example of search Documentation Record | Screening and Selection Recc

APPENDIX F

Data Collection and Extraction Form

Extractor's Initials _____ Date of Extraction _____

Study/Document Identification

Document Name

Document ID#

Authors and Year *(last names of authors and year of publication, e.g., Johnson, Jones, and Jackson 2011)*

Full Document Title

Notes:

General Information

Date form completed ***(dd/mm/yyyy)***	
Source/Publication Type *(journal, book, conference, report, dissertation, abstract, etc.)*	
Source Name *(Title of Journal, Book, Organization, etc.)*	
Document Language	
OTHER:	

Notes:

Design Characteristics and Methodological Features

	Descriptions as stated in report/paper	**Location in text** *(pg & ¶/fig/table)*
Aim of study		
General Method (Quant, Qual, Mixed)		
Design or Specific Research Approach		
Study Start Date (dd/mm/yyyy)		
Study End Date (dd/mm/yyyy)		
Duration of participation		
Ethical Approval Obtained/Needed for study		
Notes:		

Setting Information

Component	**Description as Stated in Document**	**Location in Text**
Study Location		
Data Collection Setting		

Notes:		

Participant Information

Component	**Description as Stated in Document**	**Location in Text**
Population Description (from which study participants are drawn)		
Inclusion Criteria		
Exclusion Criteria		
Recruitment Methods		
Sample Size		
Participant Gender		
Participant Age		
Participant Race/Ethnicity		
Participant Sexual Orientation		
Participant HIV status		
Participant Socioeconomic Status		
Notes:		

Assessment of Research Variables

RESEARCH VARIABLES	**How Assessed** *(Measure, Observation, Interview Question, Archival, etc.)*	**Reliability/Validity/Utility**	**Location in text** *(pg & ¶/fig/table)*
Gay or bisexual Black male identity			
Gay or bisexual Latino male identity			
HIV transmission risk			

Psychosocial intervention			
HIV negative to servoconversion			
Community-Based intervention			
Notes:			

Intervention Information

	Description as stated in report/paper	**Location in text** (pg & ¶/fig/table)
Type of intervention used		
Name of intervention used		
Length of intervention conducted		
Other		
Notes:		

Results and Outcomes

	Description as stated in report/paper	**Location in text** *(pg & ¶/fig/table)*
Key Result #1		
Key Result #2		
Key Result #3		

Key Result #4		
Key Result #5		
Key Result #6		
Key Result #7		
Key Result #8		
Notes:		

Conclusions and Follow-up

	Description as stated in report/paper	**Location in text** *(pg & ¶/fig/table)*
Key conclusions of study authors		
Study Author's Recommendations for Future Research		
Does the study directly address your review question? ***(any issues of partial or indirect applicability)***		
Your Take-Aways: General		

Your Take-Aways: Implications for Practice		
Salient Study Limitations (to inform Quality Appraisal)		
Notes:		

APPENDIX G

Quality Assessment Form

Study ID#: _____ **Publication Year:** _____

Publication Author(s): _____

PART I

Category of Study Design	**Methodological Quality Criteria**		**Responses**			
			Yes	**No**	**Uncertain**	**Comments**
Screening Questions (for all types)	S1	Are there clear research questions?				
	S2	Do the collected data allow to address the research questions?				
1 Qualitative Studies	1.1	Is the qualitative approach appropriate to answer the research question?				
	1.2	Are the qualitative data collection methods adequate to address the research question?				
	1.3	Are the findings adequately derived from the data?				
	1.4	Is the interpretation of results sufficiently substantiated by data?				
	1.5	Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2 Quantitative Randomized Controlled Studies	2.1	Is randomization appropriately performed?				
	2.2	Are the groups comparable at baseline?				
	2.3	Are there complete outcome data?				

	2.4	Are outcome assessors blinded to the intervention provided?				
	2.5	Did the participants adhere to the assigned intervention?				
3 Quantitative Non-randomized Studies	3.1	Are the participants representative of the target population?				
	3.2	Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3	Are there complete outcome data?				
	3.4	Are the confounders accounted for in the design and analysis?				
	3.5	During the study period, is the intervention administered (or exposure occurred) as intended?				
4 Quantitative Descriptive Studies	4.1	Is the sampling strategy relevant to address the research question?				
	4.2	Is the sample representative of the target population?				
	4.3	Are the measurements appropriate?				
	4.4	Is the risk of nonresponse bias low?				
	4.5	Is the statistical analysis appropriate to answer the research question?				
5 Mixed Methods Studies	5.1	Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2	Are the different components of the study effectively integrated to answer the research question?				
	5.3	Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				

	5.4	Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5	Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

PART II

Specific Design/Inquiry Approach: _____

RATING SCALE: Strong=3 Good/Adequate=2 Weak=1 Missing=0 N/A

1. **Strength of Literature Foundation and Rationale for Study: _____**
   (POSSIBLE CONSIDERATIONS: current and relevant references, background literature sufficiently comprehensive, Need/Rationale for study clearly stated, etc.)

2. **Clarity and specificity of Research Aims/Objectives/Questions/Hypotheses: _____**

3. **Quality of research design or methodological approach: _____**
   GENERAL CONSIDERATIONS: provides rationale for design chosen, appropriateness for research questions, clear description of design and methodological approach, strength of design characteristics utilized

   QUANTITATIVE CONSIDERATIONS: internal and external validity considered in design; potential confounds, identified and addressed in some way, specific design-based "risk of bias," criteria considered such as randomization, blinding

   QUALITATIVE CONSIDERATIONS: consistent with specific practices relevant to the inquiry strategy (e.g., phenomenological study, case study, grounded theory, etc.), triangulation, audit trail

4. **Sample Selection and Characteristics: _____**
   GENERAL CONSIDERATIONS: detailed description of sample characteristics, adequacy of sample characteristics in the context of research aims, detailed description of recruitment and selection of participants; rationale provided for sample size; inclusion and exclusion criteria indicated as relevant
   QUANTITATIVE CONSIDERATIONS: representativeness of sample, adequacy of sample size in context of design, extent of selection or sample bias
   QUALITATIVE CONSIDERATIONS: sample size appropriate for inquiry strategy; rationale for purposeful sample characteristics

5. **Data Collection Tools (Scales, Observation, Interviews, etc.): _____**
   GENERAL CONSIDERATIONS: rationale for selection, appropriateness for assessing variables, development of study-specific tool or process clearly described, piloting, pretesting;
   QUANTITATIVE CONSIDERATIONS: psychometric properties (reliability, validity, utility) reported, adequacy of psychometric properties, normative or standardization data described
   QUALITATIVE CONSIDERATIONS: appropriateness for inquiry strategy and purpose; interview or other data collection process described clearly and comprehensively

6. **Data Collection Processes: _____**

(POSSIBLE CONSIDERATIONS: data collection procedures clearly described in sufficient detail, intervention strategies and implementation described in detail, quality of data collected, design-specific considerations such as attrition in RCTs, saturation in grounded theory, etc.)

7. **Analysis and Presentation of Data: _____**
   GENERAL CONSIDERATIONS: appropriateness of analysis for research questions and type of data; results presented clearly and comprehensively; usefulness and clarity of any tables, graphs, and charts
   QUANTITATIVE CONSIDERATIONS: power and effect size reported; relevant statistics reported clearly; effective use of tables
   QUALITATIVE CONSIDERATIONS: textual data and/or direct quotes reported and used effectively; transparent description of the development of themes from raw data

8. **Discussion of Study Limitations: _____**
   GENERAL CONSIDERATIONS: identifies and discusses limitations in the context of design/strategy utilized QUANTITATIVE CONSIDERATIONS: addresses various forms of bias, internal validity, external validity (generalizability), ecological validity
   QUALITATIVE CONSIDERATIONS: transferability, credibility, transparency,

9. **Consideration of culture and diversity: _____**
   (POSSIBLE CONSIDERATIONS: attention to diversity within sample, includes culturally appropriate methods
   and tools, avoids biased language, uses appropriate terminology, etc.)

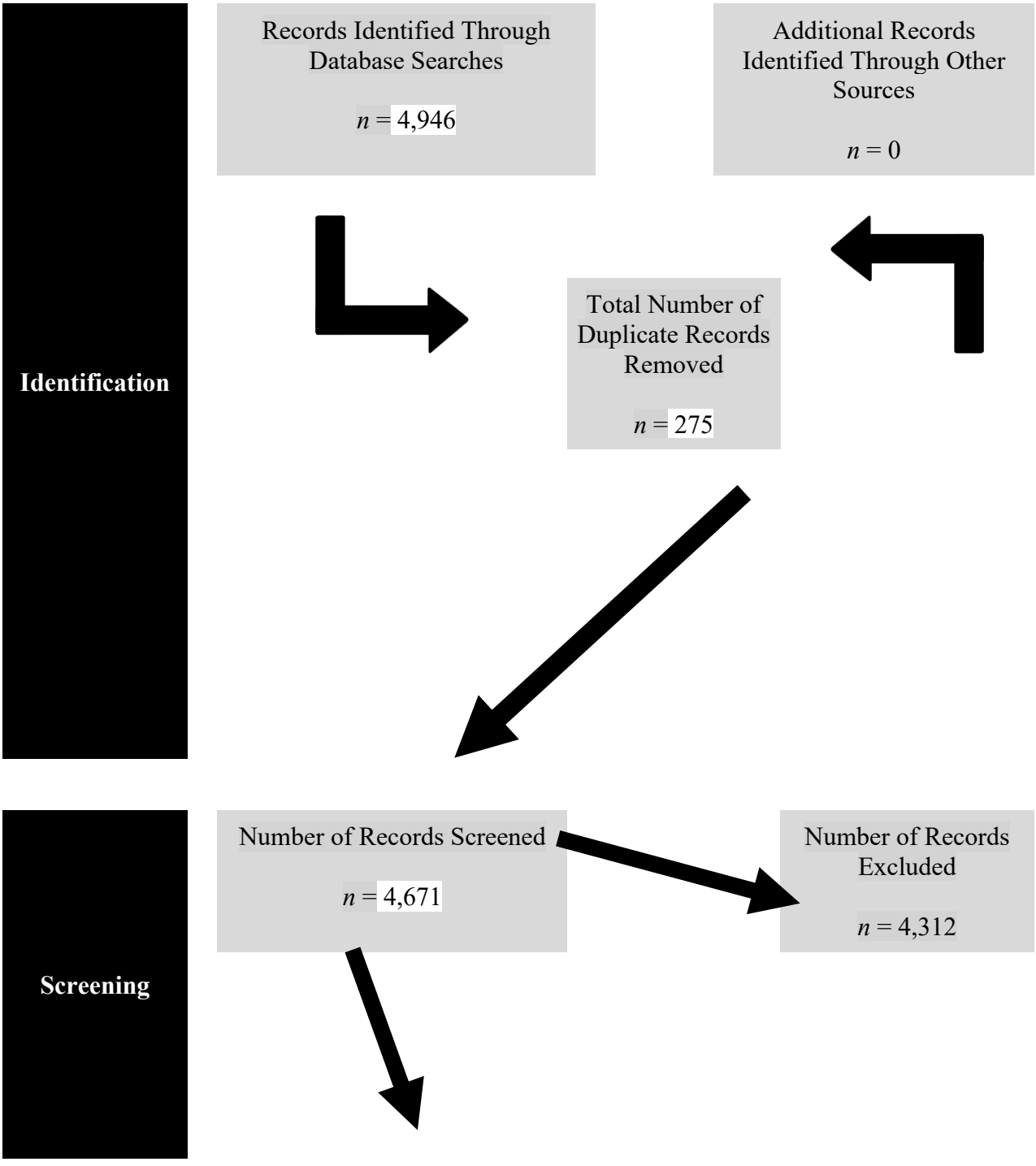
10. **OVERALL RATING: EXEMPLARY STRONG GOOD/ADEQUATE WEAK**
    (e.g., all "3"s) (e.g., mostly "3"s) (e.g., mostly "2"s) (e.g., mostly "1"s)

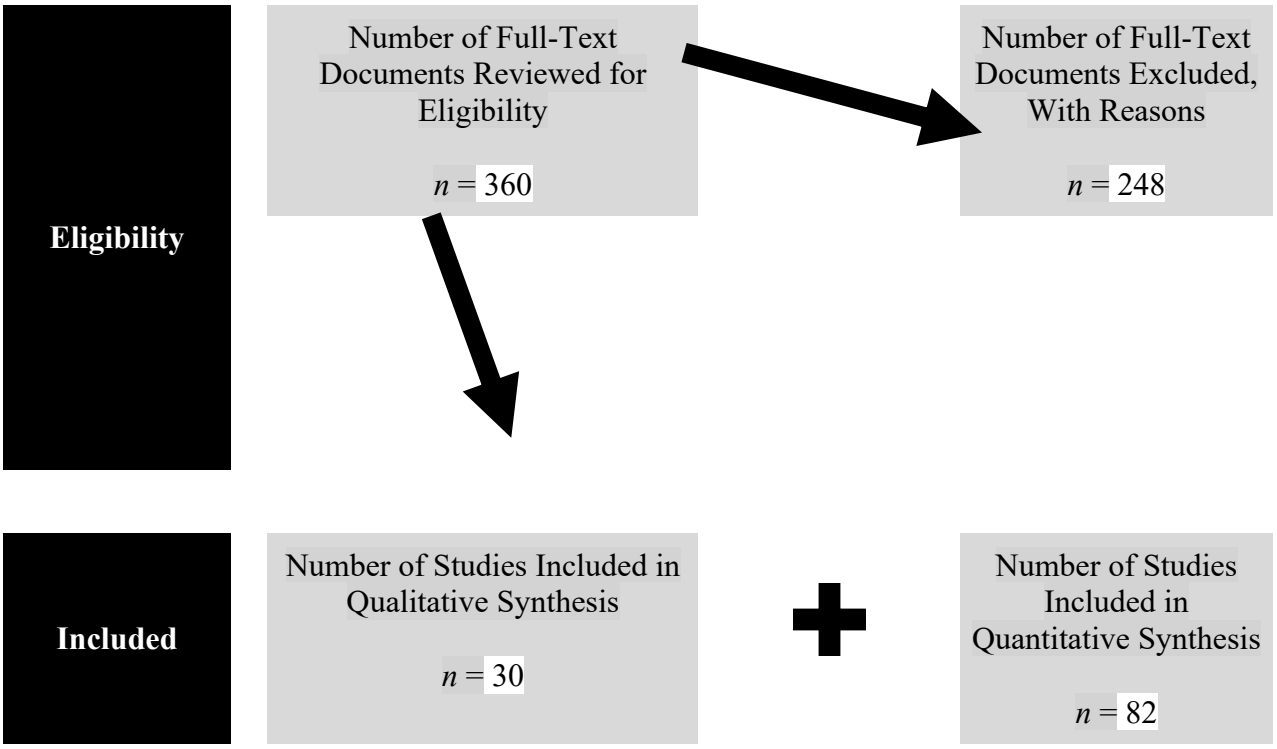
TOTALS	**3s**	**2s**	**1s**	**0s**
GRAND TOTAL:				

11. OVERALL RATING	**Exemplary (27-30)**	**Strong (22-26)**	**Adequate (16-21)**	**Weak (0-15)**
	_____	_____	_____	_____

APPENDIX H

Study Selection Flow Diagram




Eligibility
Number of Full-Text Documents Reviewed for Eligibility
n = 360
Number of Full-Text Documents Excluded, With Reasons
n = 248
Included
Number of Studies Included in Qualitative Synthesis
n = 30
Number of Studies Included in Quantitative Synthesis
n = 82

APPENDIX I

Testing Makes Us Stronger (TMUS)