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Factors That Contribute to The Disproportionate Rates of HIV among Black Men Who Have Sex with Men (MSM): A Systematic Review

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ABSTRACT

Factors That Contribute to The Disproportionate Rates of HIV among Black Men Who Have Sex with Men (MSM): A Systematic Review

By

Santanna Sharay Comer

May 2017

BACKGROUND: Black men who have sex with men (MSM) are becoming infected with HIV at considerable rates. Research has shown that the HIV disparity among this population is not explained by a single individual risk factor, but may be explained by factors specific to this population.

OBJECTIVE

The primary purpose of this study is to conduct a systematic review of research articles with regards to factors other than individual risk factors that contribute to the HIV disparity among Black men who have sex with men (MSM) in the United States.

METHODS

A literature search of the databases Pubmed, Psycinfo, and Medline was conducted to identify articles relevant to the HIV disparity among Black MSM. Keywords Black MSM, HIV, HIV infections, disclosure, sexual networks, sexual behaviors, STDs/STIs, partnership characteristics and concurrency were used to identify relevant articles. Full text articles were examined for relevance to the research question and articles that did not meet the inclusion criteria were eliminated.

RESULTS

Black MSM are disproportionately affected by HIV and research has shown that individual risk factors such as lack of condom use, drug use, and number of sexual partners to name a few does not explain the HIV disparity among this population. This review found evidence that the HIV disparity among Black MSM is best explained by differences in the following social and structural factors: stigma and internalized homophobia; prevalence of sexually transmitted diseases (STD's); sexual networks; partnership characteristics; disclosure; socioeconomic factors; lack of access to preventive services and treatment, and bisexuality.

CONCLUSION: Rates of HIV infection among Black MSM remains of great concern. There is a critical need for the development and implementation of innovative evidence-based interventions that are culturally tailored to this population.

FACTORS THAT CONTRIBUTE TO THE DISPROPORTIONATE RATES OF HIV AMONG
BLACK MEN WHO HAVE SEX WITH MEN (MSM): A SYSTEMATIC REVIEW

by

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Bachelor of Arts, Fort Valley State University

A Capstone Submitted to the Graduate Faculty
of Georgia State University in Partial Fulfillment
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APPROVAL PAGE

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__April 19, 2017__

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Author's Statement Page

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Santanna Comer

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TABLE OF CONTENTS

LIST OF TABLES.....	7
INTRODUCTION.....	8
Overview/Background.....	8
Purpose of the Study.....	10
METHODS.....	12
ARTICLES REVIEWED.....	14
RESULTS.....	18
DISCUSSION.....	36
RECOMMENDATIONS.....	39
LIMITATIONS.....	41
CONCLUSIONS.....	41
REFERENCES.....	42

List of Tables

Table 1 Quality Assessment of Articles Reviewed

Table 2 Summary of Results

List of Figures

Figure 1 Flowchart of Selection of Studies

Introduction

Overview/Background

Human immunodeficiency virus, commonly known as HIV, is the virus that can lead to acquired immunodeficiency syndrome (AIDS) if untreated (Center for Disease Control and Prevention [CDC], n.d.). HIV attack the body's CD4 cells (T cells), which help the immune system fight off infections, weakening the immune system (CDC, n.d.). If left untreated, HIV tends to drastically reduce the number of CD4 cells (T cells) in the body, making a person's body vulnerable to a variety of opportunistic infections or cancers due to a weakened immune system (CDC, n.d.). It is believed that the source of HIV infection in humans derived from a type of chimpanzee in Central Africa (CDC, n.d.). Scientists believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus, or SIV) mutated into HIV when transmitted to humans as a result of coming into contact with the chimpanzee's infected blood while hunting the chimpanzee's for meat (CDC, n.d.).

According to the Center for Disease Control (CDC), research shows that HIV may have transitioned from apes to humans as far back as the 1800s and slowly spread throughout the rest of the world eventually coming into existence in the United States in the mid -1970s. There are 3 stages of progression of disease when infected with HIV: (1) Acute HIV infection (Within 2 to 4 weeks people may experience flu-like symptoms, have a high amounts of virus in the blood and are extremely contagious) (CDC, n.d.), (2) Clinical Latency (dormancy), sometimes called *asymptomatic HIV infection* or *chronic HIV infection* (virus still active but reproduces at very low levels, period that can last a decade or several decades depending on if the person is treated or untreated, and a person's viral load starts to go up and the CD4 cell count begins to go down

at the end of this phase (CDC, n.d.), (3) Acquired immunodeficiency syndrome or AIDS (the last and most severe phase of HIV infection, usually diagnosed when CD4 cell count drops below 200 cells/mm or if certain opportunistic illnesses develop, and survival is usually 3 years without treatment) (CDC, n.d.). HIV is transmitted through blood, semen, pre-seminal fluid (*pre-cum*), rectal fluids, vaginal fluids, and breast milk from a person who is HIV positive.

Contrary to some myths, it is not transmitted by air, water, saliva, sweat, tears, kissing, insects or the sharing of toilets, food, or drinks (CDC, n.d.). According to the CDC, HIV does not survive long outside the human body (such as on surfaces). However, HIV can live in a used needle up to 42 days depending on temperature and other factors (CDC, n.d.). More than 1.2 million people in the US are living with HIV, and 1 in 8 of them are not aware of their infection (CDC, n.d.). Gay and bisexual men accounted for 82% (26,375) of HIV diagnoses among males and 67% of all diagnoses in 2015 (CDC, n.d.). Gay and bisexual men, particularly young Black gay and bisexual men, are most affected (CDC, n.d.).

Purpose of Study

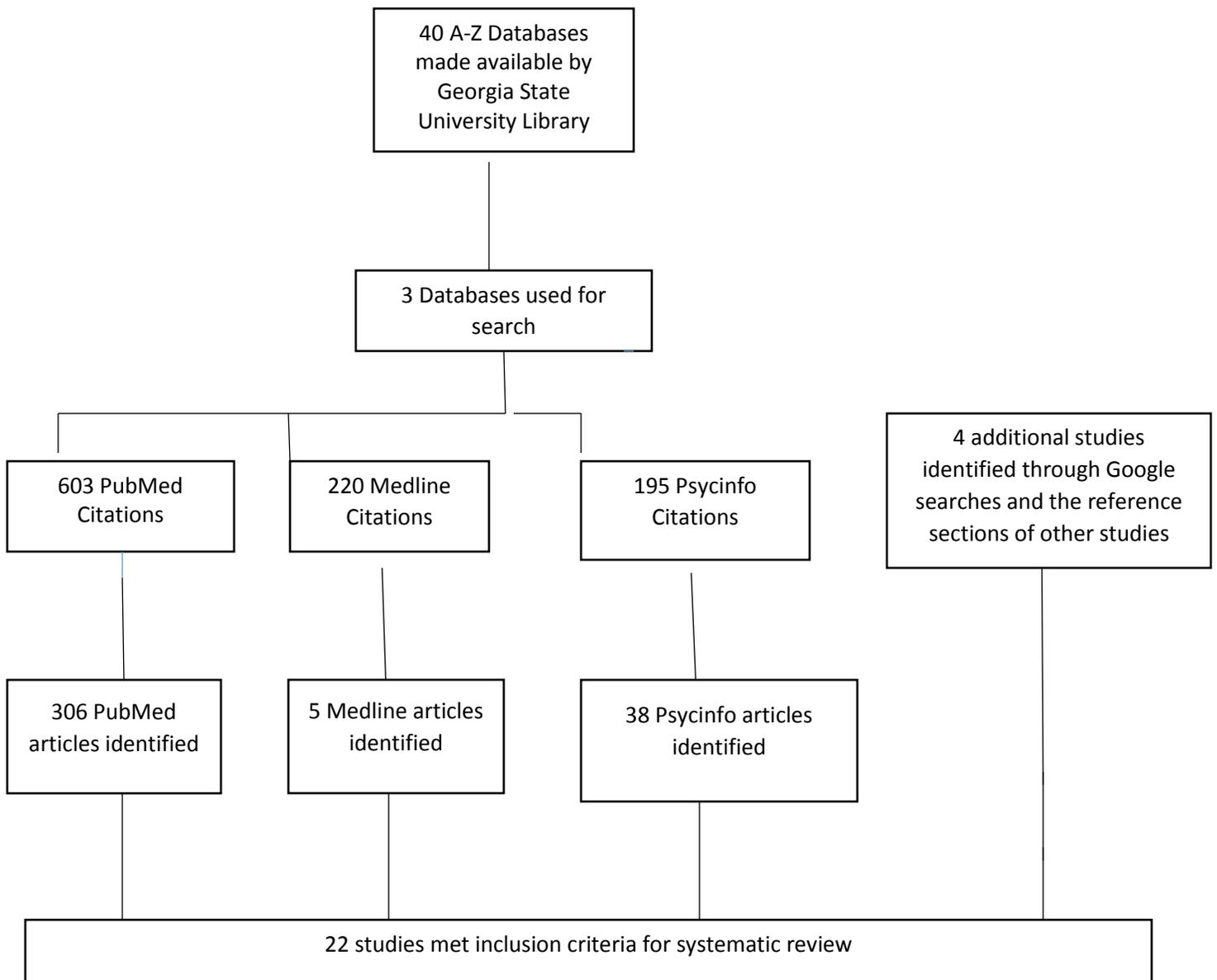
The HIV/AIDS epidemic affects many people across the world. There is no specific age, race, economic, gender or sexual orientation that has not been affected. However, some populations are affected more than others and are increasing at significant rates. Prevention efforts developed throughout the years have somewhat led to decreases in new diagnosis, and with the development of medications to control infection people are living much longer. Yet African Americans are disproportionately affected. African Americans represented 12% of the US population, but accounted for 45% (17,670) of HIV diagnoses. The group most affected by disproportionate rates of HIV is Black men who have sex with men (MSM). In 2010 Black men accounted for 31% of all new HIV infections (CDC, n.d.-a). The rate of these infections were six times as high as the rate among white men, and more than twice that of Hispanic men (CDC, n.d.-b). Per the CDC, the number of new HIV diagnoses fell 19% from 2005 to 2014 overall. However, during this same period, there was a 22% increase in diagnosis among Black gay and bisexual men and 87% among young Black gay and bisexual men. It is believed that if current diagnosis rates continue, about 1 in 2 Black gay and bisexual men will be diagnosed with HIV in their lifetime compared to 1 in 4 Hispanic gay and bisexual men, 1 in 11 White gay and bisexual men, and 1 in 6 gay and bisexual men overall (CDC, n.d.-b). Among all gay and bisexual men diagnosed with HIV in the United States in 2014, Black accounted for the highest number (estimated at 11,201; 38%) compared to white (estimated 9,008; 31%), and Hispanic (estimated 7552; 26%) (CDC, n.d.-a). In 2014 an estimated 39% (4321) of Black MSM diagnosed with HIV were aged 13-24, 36%(3995) aged 25-34, 13% (1413) aged 35-49, 9% (989) aged 45-54, and 4% (486) were aged 55 or older (CDC, n.d.-a).

Although the rates of HIV infection are higher for Black MSM than for MSM of any other race/ethnicity, research has shown that individual risk factors for contracting HIV are no different for Black MSM than any other race in regards to drug use, lack of condom use, and number of sexual partners. In fact, Black MSM have been found to have fewer sex partners, fewer had ever engaged in intentional unprotected anal sex, and more used condoms at last anal sex (Magnus et al., 2010). So, the question is, “What factors other than individual risk factors contribute to the high HIV disparity among Black MSM?” The purpose of this study is to conduct a systematic review of the literature identifying and describing factors other than individual risk factors that contributes to the disparity in HIV rates among Black MSM in the United States.

Methods

The systematic review process began by forming the research question, “What factors other than individual risk factors contribute to the HIV disparity among Black Men who have sex with Men (MSM)?” Literature searches were conducted using the A-Z databases available through the Georgia State University website by the university library. Pubmed, Psycinfo, and Medline were the databases searched. Based on the purpose of the study keywords Black MSM, HIV, HIV infections, disclosure, sexual networks, sexual behaviors, STDs/STIs, partnership characteristics and concurrency were used to search for relevant articles. After reviewing these databases, additional articles were selected through references sections and systematic reviews. The primary outcome of the systematic review was the factors that specifically contributed to the HIV disparity among Black MSM. The inclusion criteria included full text articles with a cross-sectional, cohort, or literature review study design. Only articles that were relevant to black MSM and factors that may contribute to the HIV disparity were included. Articles that focused solely on other races, MSM in general, and women were excluded. Additionally, articles that were not relevant to the disparity were excluded. Only articles published in English and conducted in the United States were included. There were no restrictions placed on date of publication, or age. Titles and abstracts were examined for relevance to the research question. Based on the abstracts, articles that were not relevant to the research question were excluded. Full text articles were then examined for relevance to the research question and articles that did not meet the inclusion criteria were eliminated.

Figure 1 Flowchart of Selected Studies



Inclusion criteria

- Full text articles with cross sectional, cohort, and literature review design
- Only articles relevant to Black MSM and the factors that contribute to HIV disparity
- Articles published in English and conducted in the United States

Exclusion criteria

- Articles that focused solely on: other races, MSM in general, and women
- Articles that were not relevant to the disparity

**Articles included in the systematic review were identified through various search filters using the inclusion criteria. Titles and detailed abstracts were reviewed for relevancy and eliminated based on inclusion and exclusion criteria. Full text articles were reviewed for relevancy and eliminated based on inclusion and exclusion criteria. Controlled for duplicate articles

Articles Reviewed

There were 40 databases provided for Public Health by Georgia State University's Library. Pubmed, Psycinfo, and Medline were the most relevant for the topic chosen for this systematic review. Pubmed is maintained by the National Center for Biotechnology Information (NCBI) and contains biomedical literature from Medline, life journals, and online books discussing life sciences, behavioral sciences, chemical sciences, and bioengineering. Keywords used were Black MSM and HIV. The pubmed search yielded 603 articles; after filtering for free full text and full text articles, 306 articles were presented. Each Pubmed title and abstract was reviewed for relevancy, 10 articles were reviewed for inclusion criteria and included in the systematic review.

The Medline database includes articles from medical journals with interests in the fields of medicine, nursing, dentistry, veterinary medicine, health care systems, and preclinical sciences. Using the following combinations of keywords: Black msm AND hiv AND disclosure, Black msm AND hiv AND sexual networks, Black msm AND hiv infections, Black msm AND hiv infections AND sexual behaviors. Search results yielded 15, 20, 185 (after filtering by United States only 62 articles), and 22 articles respectively. After controlling for duplicate articles within medline and pubmed, 5 articles were reviewed for inclusion criteria and included in the review.

The Psycinfo database contains summaries and citations of journal articles, books, dissertations, and technical reports in psychology. The database provides information on the following disciplines: medicine, psychiatry, nursing sociology, education, pharmacology, linguistics, anthropology, business, and law. Keyword search: Black MSM and HIV. Search produced 195 articles. To minimize the results, the search was filtered by sexual behavior and

sexual orientation. The search then yielded 38 articles in which the titles and abstracts were reviewed for relevancy. After controlling for duplicate articles within psycinfo and the above-mentioned databases, 3 articles were chosen from this database to be included in the review.

The remaining 4 articles used in this systematic review were found through google searches and through the references section of other articles. Other databases outside of those provided by the University were considered for review; however, full articles could only be viewed by having a membership or providing a monetary payment. There was a total of 22 articles included in this review. The studies included in this systematic review varied in setting and no restrictions were placed on the time period in which the study was conducted. Most of the studies were conducted from 2004 to 2014. Seven of the studies did not specify a certain time period from which the study was conducted but were published from 2008 to 2014. All studies chosen were in English and conducted in various states throughout the United States.

Table 1. Quality assessment for screened and included articles

Author (year)	Clearly stated purpose?	Relevant background/literature reviewed?	Does the study apply to the research question?	Sample described in detail?	Results reported in statistical significance?	Conclusions appropriate to study methods and results?
Bohl et al, (2009)	Yes	Yes	Yes	Yes	Yes	Yes
Bond et al. (2009)	Yes	Yes	Yes	Yes	Yes	Yes
Gant et al. (2014)	Yes	Yes	Yes	Yes	Yes	Yes
Glick & Golden (2010)	Yes	Yes	Yes	Yes	Yes	Yes
Grey et al. (2015)	Yes	Yes	Yes	Yes	Yes	Yes
Hernandez-Romieu (2015)	Yes	Yes	Yes	Yes	Yes	Yes
Jeffries et al. (2013)	Yes	Yes	Yes	Yes	Yes	Yes
Lauby et al. (2012)	Yes	Yes	Yes	Yes	Yes	Yes
Magnus et al. (2010)	Yes	Yes	Yes	Yes	Yes	Yes
Malebranche (2008)	Yes	Yes	Yes	N/A	N/A	Yes
Maulsby et al. (2014)	Yes	Yes	Yes	N/A	N/A	Yes
Mayer et al. (2014)	Yes	Yes	Yes	Yes	Yes	Yes
Millett et al. (2006)	Yes	Yes	Yes	N/A	N/A	Yes
Millett et al. (2005)	Yes	Yes	Yes	N/A	N/A	Yes
Neaigus et al. (2014)	Yes	Yes	Yes	Yes	Yes	Yes
Newcomb & Mustanski (2010)	Yes	Yes	Yes	Yes	Yes	Yes
Newcomb & Mustanski (2013)	Yes	Yes	Yes	Yes	Yes	Yes
Peterson & Jones (2009)	Yes	Yes	Yes	N/A	N/A	Yes
Raymond & McFarland (2009)	Yes	Yes	Yes	Yes	Yes	Yes
Tieu et al.	Yes	Yes	Yes	Yes	Yes	Yes

(2015)						
Winter et al. (2012)	Yes	Yes	Yes	Yes	Yes	Yes
Woliski et al. (2006)	Yes	Yes	Yes	Yes	Yes	Yes

***N/A= Not Applicable**

Results

Researchers believe that there are factors more specific to Black MSM that lead to disproportionate rates of infection. These factors are a combination of social and structural factors that include: stigma and internalized homophobia, prevalence of sexually transmitted diseases (STD's), sexual networks, partnership characteristics, disclosure, socio-economic factors, lack of access to preventive services and treatment, and bisexuality.

Social/Structural Factors

Internalized Homophobia & Stigma

Overall trends in attitudes about homosexuality has changed throughout the years dating back as early as 1973 when it was found that 72.5% of respondents indicated that homosexuality was “always wrong” when asked the question (Glick & Golden, 2010). Throughout the 1970s and 1980s the proportion increased eventually reaching its peak in 1988 at 77.8% before rapidly declining to just 61% by 1996 and 54.7% by 2008 where it remained stable (Glick & Golden, 2010). However, when comparison was made among the Black and White respondents, it was found that there was only a 14% (from 84.2% in 1973 to 72.3% in 2008) decrease among Blacks who believed that homosexuality was “always wrong”, whereas, among White respondents the proportion went from 70.8% in 1973 to 51.7% (27% drop) in 2008 (Glick & Golden, 2010). Among MSM attitudes toward homosexuality differed significantly by race with 57.1% of Blacks feeling that homosexuality was “always wrong” compared to 26.8% White MSM (Glick & Golden, 2010). The percentage differences mentioned above between races are a clear indication that despite homosexuality becoming more accepted by the population overall, it is still looked down upon by the black community. Social norms within the black community act as barriers to acceptance among black MSM. As a result, social norms in regards to homosexuality

can often lead to increased internalized homophobia for black MSM within the Black community. Internalized homophobia includes negative attitudes toward homosexuality, discomfort with disclosure of sexual orientation, disconnectedness from other homosexuals, and discomfort with same-sex sexual activity (Newcomb & Mustanski, 2010).

In the Black community homosexuality is seen as something perverse and unnatural. Consequently, black men involved in homosexual activity are often shunned by large portions of the Black community. Increased internalized homophobia may also be a result of the influence of organized religion within the Black community. In many Black churches, the messages given by Pastors during sermons are very critical of homosexuality. They tend to hold strong beliefs that God created Adam and Eve and not Adam and Steve as some would say. Stigma can lead to limited access to health care, poor mental health, stress, unsafe sexual practices, social isolation, and even suicide. Because of these things researchers believe that stigma undermines the health of MSM. It is believed that due to internalized homophobia and stigma rates of HIV infection among Black MSM has increased. The Jeffries et al (2013) study investigated whether experiences of homophobic events increased the odds of engaging in unprotected anal intercourse (UAI) among black MSM and whether social integration level buffered the association. Six social integration constructs were assessed: social support, closeness with family members, closeness with gay and heterosexual friends, attachment to the black gay community, ability to be open about sexuality within one's religious community, and MSM social network size (Jeffries et al., 2013).

Results of the study showed that black MSM who experienced homophobic events in the past 12 months were more likely to engage in UAI than were men who did not, and men who were not previously diagnosed with HIV and who were treated rudely/unfairly or made fun

of/called names (but not being hit/beaten up) was independently associated with increased odds of engaging in UAI (Jeffries et al., 2013). For men who were diagnosed with HIV prior to participating in the study, all levels of homophobic events independently predicted increased odds of HIV transmission risk behavior (Jeffries et al., 2013). Overall, findings suggest that the experience of homophobic events may place black MSM at risk for acquiring and transmitting HIV infection (Jeffries et al., 2013). Unlike other studies that believe having strong social support serves as a buffer against many barriers which can impede positive health behavior, buffering effects were not observed in this study. Investigators in this study found no evidence that social integration mitigated homophobia's association with UAI (Jeffries et al., 2013). According to Jeffries et al (2013) they did not measure aspects of social integration (e.g. social engagement) that might potentially buffer the relationship between homophobia and UAI and that it would be premature to draw strong conclusions based on their findings. I agree with the authors in regards to drawing premature conclusions. If the association between having positive social relationships and UAI were not observed, then one cannot definitively say that social integration does not influence homophobia's association with UAI.

Lauby et al (2012) found that having social support is associated with increased HIV testing and a reduction in risk behavior among black MSM. An investigation in three cities found that black MSM who reported higher levels of social support were significantly more likely than their counterparts with lower levels of social support to be tested for HIV infection (Lauby et al., 2012). In addition, social support was also associated with a lower risk of delayed testing among Black MSM. It's safe to assume that if there was more social support for black MSM, they would be less likely to partake in risky behaviors and more likely to be frequently tested, which in turn can reduce the prevalence of HIV and other STDs.

Prevalence of Sexually Transmitted Diseases/Infections (STDs/STIs)

Prevalence of Sexually transmitted diseases (STD) or sexually transmitted infections (STIs) seems to have a huge effect on the disproportionate rates of HIV among Black MSM. There is biological evidence that having a STD increases risk of acquiring and transmitting HIV (Maulsby et al., 2014). STDs increase susceptibility to HIV infection through ulcers and inflammation and increase transmission through viral shedding (Maulsby et al., 2014). Prevalence of STDs increase vulnerability to and transmissibility of HIV infection (G. A. Millett, Peterson, Wolitski, & Stall, 2006). According to Millet et al. (2006), Black MSM were more likely than other MSM to report ever having had an STD or currently having an STD. In one of the largest cohorts conducted by Mayer et al (2014) it was shown that those with untreated STIs were more likely to have undiagnosed HIV infection and Black MSM who were unaware of their HIV infection were most likely to have undiagnosed STI (Mayer et al., 2014). This may be perhaps due to lack of access to health care or cultural norms regarding black men and going to the doctor. Typically, black men do not like going to the doctor. The study also found that asymptomatic STIs were highly prevalent among the participants, with more than 16% having at least one bacterial STI at study entry (Mayer et al., 2014). In a study conducted in New York City of MSM who tested positive for HIV, it was found that Black MSM were significantly more likely to be co-infected with gonorrhea, syphilis, or non-gonococcal urethritis than HIV-positive White MSM (60% vs. 18%) (G. A. Millett et al., 2006). A similar study, found that Black MSM were 3–4 times more likely to have urethral or rectal GC, rectal CT, or a positive syphilis RPR result (Sullivan et al., 2014). Although the likelihood of testing for Black MSM is the same as other MSM who has ever been tested, Black MSM tended to be tested less frequently and much

later in their HIV infection (G. A. Millett et al., 2006); thus leading to increased rates of unrecognized infection within the networks of Black MSM.

Sexual Networks

High rates of unrecognized HIV infection among Black MSM lead to increased odds of transmitting HIV to sexual partners. Studies on the patterns of the sexual networks of Black MSM indicate that these partners are likely to be other Black MSM. In one of the largest sexual network studies, Tieu et al (2015) suggested that characteristics of sexual networks at high risk for transmitting HIV may include increased level of connectivity (extent to which people are connected), sex partner concurrency (in which sex with one partner takes place between two sex intercourse acts with another partner), and geographical insularity (i.e., proximity based on geography). Additionally, factors such as assortative and disassortative mixing (the extent to which partners are similar to or different from one another based on characteristics such as race/ethnicity and age) have implications for HIV acquisition and transmission (Tieu et al., 2015). Studies have shown that black men are less likely to know the HIV status of their partners and less likely to practice serosorting (choosing sex partners with the same HIV status) (Tieu et al., 2015).

The Tieu et al (2015) study aimed to describe the characteristics of sexual networks of Black MSM in six US cities who were enrolled in the HIV Prevention Trials Network (HPTN) 061 study and evaluate network, socio-demographic, and risk behavior factors associated with assortative mixing by race/ethnicity (having sex partners of same race/ethnicity, i.e., Black partners), disassortative mixing by age (having sex partners different in age from oneself), and serostatus unknown unprotected anal intercourse. Results showed over half (55%) had only

Black partners in the last 6 months, less than half (46%) had a partner of at least two age category difference, and 87% had ≤ 5 partners (Tieu et al., 2015). Differences in association were observed among HIV negative and HIV positive men. Among HIV negative men, not having anonymous/exchange trade partners and low density were associated with having a black partner; larger sexual network size and having non-primary partners were associated with having a partner with at least a two age category difference; and having anonymous/exchange/trade partners was associated with having serostatus unknown unprotected anal intercourse (Tieu et al., 2015). Whereas, among HIV positive men not having non-primary partners was associated with having a black partner ; and no sexual network characteristics were associated with having a partner with at least a two age category difference and serostatus unknown unprotected anal intercourse (Tieu et al., 2015). In addition, HIV-positive men reported not disclosing their HIV status to 34% of their partners (Tieu et al., 2015).

Sexual networks of Black MSM tended to be small and given the high prevalence of HIV infection in this network, higher degrees of racial/ethnic assortativity are thought to be a sign of increased HIV risk to Black MSM (Tieu et al., 2015). Despite other studies showing that Black MSM were more likely to report same race partnerships, this study found that having a Black sex partner was not significantly associated with sexual network size and overlap of social and sexual networks for both HIV-positive and HIV-negative men (Tieu et al., 2015). The authors believe this may be attributed to a limitation of the egocentric network design in that the men may not have accurate knowledge of sexual relationships and encounters between their sex partners (Tieu et al., 2015). In a study conducted in Atlanta on the heterogeneity of HIV prevalence among Black and White MSM, results showed a huge percent difference of mean network prevalence of HIV among black MSM and white MSM, of 36% and 4% respectively.

When seeds were removed from calculations, network prevalence of HIV slightly decreased to 29% (7% decrease) for black MSM and slightly increased to 5% (1% increase) among white MSM (Hernández-Romieu et al., 2015).

It is believed that a combination of attitudes on the part of other MSM, and the environments found at gay venues serve to separate Black MSM from other MSM populations (Raymond & McFarland, 2009). This separation results in Black MSM networks that are smaller and therefore potentially more highly interconnected than other MSM groups according to Raymond & McFarland (2009). Networks of Black MSM are more likely to include members who are HIV positive, HIV status unknown, and less likely to have discussed their HIV status or their partner's compared to White MSM (Hernández-Romieu et al., 2015). It is safe to assume that once HIV enters such a small network, it is likely to spread rapidly if members of the network, in this case black MSM fail to engage in safe sex practices and prevention strategies.

Partnership Characteristics

It has been said that partnering with older men increases the risk of HIV exposure to young Black MSM. This suggests that there is a high level of HIV prevalence among older Black MSM. It is possible that this is due to the fact that HIV positive people are living much longer than they were 20 years ago; thus, increasing the pool of HIV infected people within sexual networks. There are significant differences in HIV prevalence among White and Black MSM. In their study, Grey et al (2015) attempts to find out if disassortative-age mixing explain the differences in HIV prevalence among young White and Black MSM by analyzing the data of four studies. Investigators examined 48 Concordance correlation coefficients (CCC) comparisons and observed that three of the five that were found to be significant indicated greater age

disassortativity among White MSM compared to Black MSM (Grey et al., 2015). Only two of the 48 CCC comparisons indicated that Black MSM were more age-disassortative than White MSM (Grey et al., 2015). These conflicting observations suggest that factors other than age-disassortativity explain the differences in HIV prevalence among these two populations. Given the high prevalence of HIV among young Black MSM, I agree with the observation presented by Grey et al (2015) that race assortativity may explain HIV disparities more so than age disassortativity.

Newcomb and Mustanski (2013) conducted a prospective diary study on sexual partner characteristics on HIV risk in MSM in which the following three hypothesis were tested: 1) Black MSM are no more likely than other racial groups to report sexual risk; 2) Black MSM are more likely to have same-race partnerships than other racial groups (sexual homophily); and 3) sexual partner age and familiarity with partners are associated with sexual risk in MSM (Newcomb & Mustanski, 2013). The effects of age and race on the association between sexual partnership characteristics and sexual risk were explored as well. The study found that odds of reporting sexual risk behaviors compared to all other racial groups combined was 68% for Black MSM, Black MSM were the most sexually homophilous racial group and were nearly 11 times more likely than other groups to have Black partners, having an older sexual partner was associated with increased odds of unprotected sex amongst Black MSM, and odds of having unprotected sex with partners increased significantly with repeated sexual encounters among Black MSM (Newcomb & Mustanski, 2013).

It is suggested by Newcomb and Mustanski (2013) that sexual partnership characteristics such as partnership familiarity may influence condom use decisions thus increasing the risk of HIV acquisition. Additionally, Investigators found a significant three-way interaction between

participant race, participant age, and sexual partner age in predicting odds of sexual risk. Young Black MSM were deemed the most likely to have unprotected sex with older partners compared to the other groups. A similar study reported that Black MSM may be unaware of the high prevalence of HIV infection among other Black MSM and in turn may perceive assortative sexual mixing with other Black MSM as protective, which may encourage unprotected sex and increase the risk of HIV transmission and acquisition (Neaigus et al., 2014). Moreover, Neaigus et al (2014) state sex partner homophily may contribute to the maintenance of the racial/ethnic disparity in HIV infection due to fewer sexual network bridges between black MSM and MSM of other racial/ethnic groups.

In a study conducted by Raymond and McFarland (2009) in San Francisco it was observed that when it came to racial mixing and general partner preferences, with the exception of Blacks themselves, all other races scored Blacks the lowest on sexual preference (Raymond & McFarland, 2009). Black MSM were perceived to be an increased risk for HIV infection, counted less frequently among the friendships of other groups, and considered least easy to meet (Raymond & McFarland, 2009). Though Blacks were not perceived as the least preferred amongst themselves in regards to sexual preference, it was surprising to find that in this particular study Black MSM significantly preferred Latinos over other Black MSM (Raymond & McFarland, 2009). Concurrency (having more than one sexual relationship at the same time) is another form of a partnership characteristic that may be responsible for the high HIV prevalence among Black MSM. A potential reason given by Bohl et al (2009) involves the peak viral load that occurs during the acute phase of an infection. Concurrent partners are put at greater risk of HIV exposure because they have a greater probability of being exposed to an acute infection (Bohl, Raymond, Arnold, & McFarland, 2009). It is believed that transmissions in the Acute

Phase may have been responsible for the rapid spread of HIV through a predominantly black sexual network in North Carolina (Bohl et al., 2009). Overall, the Bohl et al (2009) study found that although Black MSM tended to have fewer sexual partners, in the case of multiple partners, they were more likely than other MSM to have partnerships overlap or be very close to each other in time. It is important to note that concurrent partnerships do not automatically lead to HIV; it is just a greater probability of being exposed to HIV.

Disclosure

Another factor contributing to the HIV disparity among Black MSM may be lack of disclosure about HIV status. In general, disclosure is a major problem in society today. Often times people just dive right into a sexual encounter without first knowing or discussing the status of their sexual partners or themselves. A study conducted by Winter et al in 2012 highlights the issue with disclosure. The study assessed the racial differences in mutual discussions (serodiscussion) of HIV serostatus among MSM before first sex. Results showed that among 5410 partnerships reported, 45% involved unprotected anal intercourse (UAI) and 65% occurred in serodiscussion (Winter et al., 2012). Among Black MSM, 17% of the partnerships had both UAI and no serodiscussion (Winter et al., 2012).

When UAI partnerships of both HIV-positive and HIV-negative participants were compared, serodiscussion was significantly less frequent for black MSM than for white MSM (Winter et al., 2012). HIV negative Black MSM were also less likely to report serodiscussion compared to White MSM in protected anal intercourse and oral sex partnerships (Winter et al., 2012). No significant racial differences were observed among HIV positive men in regards to

protected anal and oral sex partnerships. Overall, the study found that a lack of serodiscussion was associated with a 50% increased duration from last HIV test to first sex (Winter et al., 2012).

Clearly there is a huge gap between Black and White MSM in regards to mutual discussions about HIV status that needs to be addressed. What's alarming is that among HIV positive MSM, Black MSM were 60% less likely to have a mutual discussion than White MSM. That percentage alone provides insight into how rates of HIV among Black MSM is increasing at significant rates. I agree with the investigators in this study that lack of discussion by HIV positive Black MSM may be attributed to cultural attitudes in the Black community and homophobia. In the early years of HIV discovery, HIV was being presented as if it was a gay man's disease. That association alone has a level of stigma attached to it. Although it has since gotten away from that label overall, it is possible that it is still a form of association with HIV in the black community. Additionally, the stigma associated with being HIV positive makes it difficult to disclose status out of fear of rejection.

Socioeconomic Factors/Lack of access to care

Socioeconomic factors and lower quality health care are factors that also contribute to the HIV disparity among Black MSM. In a study of the social determinates of health among Black men in regards to HIV transmission category, there were overall differing patterns of HIV diagnosis among Black MSM and Non-MSM when poverty, housing vacancies, education level, employment status and marital status was examined. As poverty increased, HIV diagnosis rates decreased among Black MSM (Gant et al., 2014). Housing vacancy was found to be positively associated with HIV rates among Heterosexuals but not among Black MSM (Gant et al., 2014). Furthermore, when educational attainment was low, HIV diagnosis for Black MSM were higher

(Gant et al., 2014). Surprisingly, as unemployment increased, HIV diagnosis rates decreased. Gant et al (2014) suggests this could be due to the fact that those who are unemployed do not have access to testing and do not get tested. Hernandez-Romieu et al (2015) observed a significant association between a marker of lower socioeconomic position (SEP), being currently unemployed and a higher mean network prevalence of HIV among black MSM. It is clear, that access to and utilization of health care resources among MSM is impacted by socioeconomic status (SES). People of low SES tend to lack adequate healthcare insurance and must rely on public assistance to take care of their medical needs. Often times, hospitals and organizations that cater to the needs of this population are overcrowded and lack sufficient personnel and resources to meet the needs of this population.

According to Peterson and Jones (2009) among HIV-positive MSM, Blacks are less likely than other MSM to have access to private clinics, to express HIV-related health concerns to their medical providers, to use outpatient health services, to report satisfaction with medical personnel in out-patient settings, to report an absence of nondiscriminatory practices among medical staff, to trust the quality and competence of outpatient medical services, and to trust physicians (Peterson & Jones, 2009). Black men were also less likely to have health insurance, have been tested for HIV, and disclose MSM status to health care providers. Two main reasons given by MSM for lack of testing consisted of not perceiving themselves to be at risk for infection and fear of a positive diagnosis (Neaigus et al., 2014). A positive diagnosis leads to the stigma of being perceived as HIV positive and disclosure of their HIV status is difficult for many Black MSM. Moreover, not being tested for HIV or infrequent testing leads to increasing rates of Black MSM being unaware of their infection. In a review conducted by Maulsby et al in 2014, it was found that 59% of HIV positive Black MSM are not even aware of their infection and

therefore are not aware of their ability of transmission to others. Lack of awareness regarding HIV infection delays linkage to care and initiation of antiretroviral therapy (ART) by Black MSM (Neaigus et al., 2014).

It has been shown that antiviral therapy decreases viral load, which lowers HIV infectivity; yet these medications are extremely underutilized by Black MSM. Studies have shown that HIV-positive Black MSM are less likely than other MSM to be on anti-retroviral therapy. Individuals who are not on antiretroviral therapy are more likely to transmit HIV to uninfected sex partners during unprotected sexual acts. Lack of antiretroviral therapy among Black MSM may explain the racial differences in HIV prevalence. Research shows that use of antiretroviral therapy (ART) reduces sexual transmission of HIV by 96%. Therefore, access to ART is important for the health and wellbeing of those who are HIV-positive and for HIV prevention (Maulsby et al., 2014). Studies suggest that blacks are less likely than whites to adhere to ART or to be retained in care (Maulsby et al., 2014). Problems with linkage to treatment and retainment in care may be due to negative encounters and distrust in medical professionals. Medical mistrust among the African American population has been high over the years; especially since the Tuskegee Experiment. Lack of trust in Medical professionals creates barriers to accessing HIV care and treatment services for Black MSM. According to Maulsby et al (2014), trust in physicians is associated with HIV-related outpatient clinic visits, fewer ER visits, acceptance of ART, increased use of ART, and ART adherence.

The information presented in the studies provided evidence to support the notion that trust and health care go hand and hand. If trust can be gained and maintained between medical

institutions and the Black community, then just maybe rates of infection may decrease and use of HIV prevention and treatment services will increase substantially.

Bisexuality

The last and yet most controversial factor given as the primary driver of the HIV disparity in the Black community over the years has been bisexuality, specifically the issue of the “down low”. However, there has been little empirical evidence to back up this notion.

Perceptions of the down low have resulted from myths and opinions and are not based on scientific fact. Information on the bisexuality of Black men is lacking in general. In fact, earlier studies of bisexuality focused on White men and women (Sandfort & Dodge, 2008). The issue of the down low first came to the forefront when an episode of the Oprah Winfrey show titled “A secret world of sex: living on the down low” aired in April of 2004 (Sandfort & Dodge, 2008). Although this was not the first mention of the topic, this episode set off the phenomenon of the down low. The term “on the down low” has not been clearly and consistently defined. Wolitski et al. (2006) broke it down best when they said the definition consisted of 5 similarities that those on the down low have been typically characterized: (1) Black, (2) not identifying as gay, (3) having sex with both men and women, (4) not disclosing their sexual behavior with men to female partners, and (5) never, or inconsistently, using condoms with males and females (Wolitski, Jones, Wasserman, & Smith, 2006).

When the relationship between down-low identification and sexual risk outcomes among 1151 Black MSM in New York City and Philadelphia was assessed, it was found that down low identification was not associated with unprotected anal or vaginal sex with male or female partners (Bond et al., 2009). The following similarities amongst down low MSM and non-down

low MSM were observed: 1) similar proportions of down low MSM and non-down low MSM who tested positive for HIV and were unaware of their infection, 2) had engaged in recent sexual intercourse with a male partner, 3) reported insertive unprotected anal intercourse, and 4) rates of unprotected sex with women (Bond et al article). In contrast, down low MSM were significantly less likely to report receptive unprotected anal intercourse, less likely to be HIV positive overall, but more likely to report sex trade activities with men and more likely to have sex with women (Bond et al., 2009).

In a similar study that compared the racial identity, sexual identity, and sexual practices of MSM from 12 US cities, it was revealed that DL-identified MSM were less likely to have had seven or more male partners in a 30-day period, 10.6 and 7.9 times more likely to report having female partners in a 6 month and a 30 day period respectively, more than seven times more likely to report male and female partners, and were more likely to report having had unprotected anal sex with a partner whose serostatus was unknown than non-DL identified MSM (Wolitski et al., 2006). Overall, DL-identified MSM in this study were found to be at greater risk than non-DL MSM for acquiring HIV from or transmitting HIV to female partners (Wolitski et al., 2006).

Existing studies show that Black MSM were more likely than MSM of other races to be bisexually active or identified; less likely to disclose their bisexual activities to others when compared to White MSM; and engage in a lower prevalence of HIV risk than Black MSM who do disclose (G. Millett et al., 2005). Black men who are bisexually active only account for 2% of the overall population, which is very small (G. Millett et al., 2005). Millett et al discovered in their review that most studies assessed bisexuality by self-report rather than self-identification. It was also shown through this review that HIV risk behavior varied among studies. In one study no differences in sexual risk taking was found according to race; however, another study found

sexual risk taking to be greater among Black MSM (G. Millett et al., 2005). Another study observed no differences in sexual risk taking with male partners but yet observed that Black MSM engaged in greater proportion of unprotected sex with female partners compared to white MSM (G. Millett et al., 2005). Studies also varied among disclosure status and sexual risks. A San Francisco study found that Black MSM who were uncomfortable with disclosing their sexuality were more likely than other Black MSM to engage in unsafe sex.

In contrast, a Chicago based study found that Black MSM reported fewer sexual risks when they scored lower on a scale that measured sexual disclosure status than those who scored higher (G. Millett et al., 2005). When comparing Black MSM disclosers and non-disclosers, Black MSM non-disclosers were more likely to have unprotected vaginal and anal sex with women and have a main female partner. However, Black MSM non-disclosers were less likely to have unprotected sex with male partners, less likely to have more than 5 male sex partners, and less likely to be HIV positive (G. Millett et al., 2005). On the contrary, Malebranche et al (2008) in an assessment of current literature on bisexuality found that earlier studies conducted by Stokes et al in the 1990s found no significant differences between disclosers and non-disclosers in number of male partners or rates of UAI with these partners and that they were equally likely to engage in UAI with male sexual partners as White MSM. However, when another analysis was conducted using more stringent criteria for bisexual behavior to compare sexual risk among bisexual and homosexual men it was found that bisexual men engaged in less receptive UAI behavior than homosexual men (Malebranche, 2008).

Table 2 Summary of Results

CAUSES OF DISPARITY	LIST OF STUDIES	MAJOR FINDINGS
Stigma & Internalized Homophobia	Glick & Golden (2010) Newcomb & Mustanski (2010) Jefferies et al (2013) Lauby et al (2012)	Despite homosexuality becoming more tolerable among society today, trends show it is still looked down upon by the black community; Internalized homophobia leads to negative attitudes, discomfort, and disconnectedness; stigma leads to limited healthcare, social isolation, unsafe sex practices etc. ; Stigma and Internalized homophobia leads to increased risk for HIV infection; social support reduces prevalence of HIV due to less likely partaking in risky behaviors and more likely to be frequently tested.
Prevalence of STD's/STI's	Maulsby et al (2014) Millett et al (2006) Mayer (2014)	Having an STD increases the risk of HIV infection; Black MSM were more likely to have ever had an STD; Black MSM were more likely to be co-infected and have unrecognized infection
Sexual Networks	Tieu et al (2015) Raymond & McFarland (2009) Hernandez-Romieu (2015)	Sexual networks among Black MSM tended to be small and have a high HIV prevalence; In addition, included members with HIV status unknown and were less likely to discuss their or their partner's status compared to other MSM
Partnership Characteristics	Grey et al (2015) Bohl et al (2009) Newcomb & Mustanski (2013) Neiagus et al (2014) Raymond & McFarland (2009)	Among Black MSM race assortativity/ sexual homophily explain HIV disparity more so than age dissortativity; Black MSM had lower odds of reporting sexual risk behaviors than other MSM; Were the most sexually homophilous group and 11 times more likely to have Black partners; Observed a 3-way interaction between race, age, and sexual partner age in predicting odds of sexual risk; Black MSM were the least preferred partner
Disclosure	Winter et al (2012)	Black UAI partnership mutual discussions (serodiscussion) were significantly less frequent than for white MSM regardless of being HIV positive or negative; Among protected anal intercourse and oral sex, HIV negative Black MSM were less likely to report serodiscussion compared to White MSM. No significant racial differences

		were observed among HIV positive men in regards to protected anal and oral
Socioeconomic Factors & Lack of access to care	Gant et al (2014) Peterson & Jones (2009) Neiagus et al (2014) Maulsby et al (2014)	Among social determinates there were differing patterns of HIV diagnosis among Black MSM in regards to poverty, housing vacancies, education, employment, and marital status; Socioeconomic status impacts access to and utilization of health services; lack of awareness of HIV infection delays linkage to care
Bisexuality (“Down Low”)	Wolitski et al (2006) Bond et al (2009) Millett et al (2005) Malebranche (2008)	Black MSM were more likely to be bisexually active or identified; Down low is not clearly and consistently defined; HIV Risk behavior and disclosure status varied among studies; Some studies found DL MSM to be at greater risk than non-DL MSM, while others found no differences or similar differences

Discussion

Based on this review, the following social and structural factors were found to contribute to the HIV disparity among Black MSM: stigma and internalized homophobia; prevalence of sexually transmitted diseases (STD's); sexual networks; partnership characteristics; disclosure; socioeconomic factors; lack of access to preventive services and treatment, and bisexuality. To begin with, homophobia and stigma have been long standing issues among the black community dating back decades. The level of disapproval of homosexual activity within this population leads to fear and chances of increased sexual risk. As noted by researchers, homophobia and stigma undermines the health of Black MSM.

Sexually transmitted diseases increase susceptibility to HIV infections and Black MSM were found to have a high prevalence of STDs and were significantly more likely to be co-infected with other STD's than MSM of other races. Sexual networks of Black MSM tended to be small, have a high degree of racial assortativity, and a high prevalence of HIV infection. There were similar but slightly different ideas when it came to how partnership characteristics affected HIV transmission and acquisition. Overall, the keys points made were: concurrency leads to increased risk of being exposed to HIV during the acute phase of infection, Black MSM were more likely to have black partners but were the least preferred among other MSM, and older partners, partner familiarity, and concurrency has a huge influence on condom use.

The issue of bisexuality has been a controversial and complex topic over the years, particularly the issue of the "down low". For years through the media and in the black community it has been portrayed that this has been the primary driver of the HIV disparity among the black community, especially among Black women. Yet little evidence has been found that prove this association. In general, not many studies have been conducted on the bisexuality

of Black men and the issue of the down low. Common issues that have arisen in these studies involve sampling and recruitment issues (i.e. small sample sizes and low bisexual representation). Additionally, the lack of definition of the down low needs to be addressed as many studies did not provide a clear definition. Instead, it was left up to the participants to define what down low meant to them.

Risk behaviors and disclosure statuses varied among studies. In some of the studies there was no association observed between down low identification and unprotected anal and vaginal sex with male or female partners; while other studies observed an association. DL identified MSM were less likely to be HIV positive overall in one study, but found to be at greater risk of transmitting or acquiring infection in another study. The impact of disclosure status on number of male partners, rates of UAI, and various sexual behaviors in Black MSM differed among the studies reviewed. While some studies found a significant association between disclosure and likelihood to engage in unsafe sexual practices, others did not. One study which had strictly defined criteria found that bisexual men engaged in less receptive UAI than homosexual men. When it came to having mutual discussions (serodiscussion) about HIV status, Black MSM regardless of HIV status were less likely to have a mutual discussion with UAI partnerships or protected anal intercourse and oral partnerships. Socioeconomic status has greatly impacted Black MSM and the quality of health care they receive. As stated in the review, HIV positive Black MSM were less likely to have access to private clinics or to utilize various forms of health services. Furthermore, Black MSM also lacked trust in the competence and quality of information given by medical personnel. The aforementioned factors, combined with lack of HIV testing and fear of a positive diagnosis creates a huge barrier in the prevention and care of

Black MSM. Lack of testing leads to increasing rates of Black MSM being unaware of their infection; thus, delaying or prohibiting their linkage to care and initiation of ART therapy.

Prevention efforts developed throughout the years have somewhat led to decreases in new diagnosis of HIV on the U.S. population overall, yet none of the prevention efforts have much of an effect if any on reducing the high rates among Black MSM. To address the HIV disparity in this population and the causal factors mentioned in this review, interventions that are culturally tailored to this population need to be developed. In general, there are a few interventions or prevention methods put in place to assist in reduction in acquiring and transmitting HIV. However, these interventions are not specifically tailored to Black MSM. Although not specifically tailored to Black MSM if used correctly and consistently can also reduce rates among Black MSM. These prevention methods are as follows: 1) ART, which may reduce the risk of HIV transmission to a negative partner by 96%. (2) PrEP which reduces the risk of acquiring HIV by 92% for HIV-negative MSM, and (3) Consistent and correct condom use. Additionally, the CDC has pushed a few programs to address the HIV issue among the Black MSM population. Some of these programs include: 1) adding funding opportunities to health departments in 2015 to help reduce HIV infections and improve HIV medical care among gay and bisexual men of color; 2) Supporting *Capacity Building Assistance for High-Impact HIV Prevention*, a national program that *addresses gaps in each step of the HIV care continuum;* and 3) launched numerous campaigns with effective and culturally appropriate messages about HIV prevention and treatment (i.e. *Doing It, Start Talking. Stop HIV.* and *Partnering and Communicating Together (PACT) to Act Against AIDS*).

Recommendations

As mentioned above, culturally tailored interventions are needed to address the HIV disparity among black MSM. Programs such as peer support groups where black MSM can gather with individuals like themselves to share experiences and develop coping mechanisms to deal with the internal struggles of being a gay black man. Peer support groups can provide a sense of comfort and support that black MSM would otherwise not feel. It has been shown through studies that peer support has a direct impact on black MSM. A study conducted by Scott et al 2014 on peer support and HIV testing highlights this fact. It was found that social support had a positive and robust association with HIV testing among young black men and receiving social support from other Black MSM friends were associated with lower risk of delayed HIV testing (Scott et al., 2014).

In a similar study, it was found that supportive social relationships had a protective effect on risks for unrecognized HIV. Those who had strong supportive relationships were more likely to have had a more recent HIV test and less likely to have engaged in high-risk sexual behavior thus lowering the odds of having unrecognized infection (Lauby et al., 2012). To address the testing and linkage to care and treatment issues more centers that specialize in prevention and harm reduction can be placed in more marginalized communities to offer free testing and treatment services. An example of this type of organization is the Atlanta Harm Reduction Coalition (AHRC) located in a part of Atlanta known as the “Bluff”. AHRC has programs that are comprehensive, culturally competent, and are designed to meet the unmet needs of their target population.

A recommendation to change social norms regarding homosexuality in the black community could be getting church leaders involved to advocate love and acceptance. This may be a bit difficult as the black community tends to revert to the bible when social norms are violated. Just as many other races in the world, the black community is afraid of what they don't understand. Knowledge is power, but only if you share it. I don't consider myself a bible toting person, but I am spiritual and I know that the bible tells us to love our neighbors. It is my opinion that if church leaders get involved in the education of black MSM, it just might be a way to bring about acceptance. An article written about Pastor Dennis Meredith stated that once he became pastor at Tabernacle Baptist Church, he too was a person that often preached against homosexuality. It wasn't until one of his sons came out to him as a gay man, that he decided to educate himself more through the bible in order to gain a better understanding of its interpretation. After careful study, he gained acceptance. He later, faced his own truth and came out as a gay man. As part of his truth, he went on to preach love and acceptance for all and not condemnation. Social views of others are hard to change without a basis to advocate for that change. The division of views rest within the bible, so I argue, why not start the dialogue with the bible. Let the first discussion focus on verse Mark 12:31 that says, "you shall love your neighbor as yourself, there is no other commandment greater than these". The second discussion would focus on verse John 8:7 which says, "Let him who is without sin among you be the first to throw a stone at her". Use the bible as the basis for discussion and go from there.

Limitations

This study had limitations including limited access to articles made available online apart from Georgia State University sources. The review could have included more articles; however, many databases required payment to access the articles. To avoid a monetary payment, the literature search was limited to the databases provided free of charge to the Georgia State University student. Due to search strategy and specific key word searches, there is a possibility that some articles on HIV disparity among Black MSM were missed and therefore excluded from this review.

Conclusion

This review examined factors other than individual risk factors that contribute to the HIV disparity among Black MSM. While rates of new diagnosis of HIV have remained stable in the U.S. population overall in recent years, findings indicate that rates among Black MSM continue to increase at significant rates. Existing research indicate that the disparity is due to social and structural factors specific to this population. Rates of HIV infection among Black MSM remains of great concern. There is a critical need for the development and implementation of innovative evidence-based interventions that are culturally tailored to this population.

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