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Perceived Discrimination and Mental Health Symptoms among Black Men with HIV

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Abstract

Objective—People living with HIV (PLWH) exhibit more severe mental health symptoms than do members of the general public (including depression and post-traumatic stress disorder/PTSD symptoms). We examined whether perceived discrimination, which has been associated with poor mental health in prior research, contributes to greater depression and PTSD symptoms among HIV-positive Black men who have sex with men (MSM), who are at high risk for discrimination from multiple stigmatized characteristics (HIV-serostatus, race/ethnicity, sexual orientation).

Method—A total of 181 Black MSM living with HIV completed audio computer-assisted self-interviews (ACASI) that included measures of mental health symptoms (depression, PTSD) and scales assessing perceived discrimination due to HIV-serostatus, race/ethnicity, and sexual orientation.

Results—In bivariate tests, all three perceived discrimination scales were significantly associated with greater symptoms of depression and PTSD (i.e., re-experiencing, avoidance, and arousal subscales) (all p -values $< .05$). The multivariate model for depression yielded a three-way interaction among all three discrimination types ($p < .01$), indicating that perceived racial discrimination was negatively associated with depression symptoms when considered in isolation from other forms of discrimination, but positively associated when all three types of discrimination were present. In multivariate tests, only perceived HIV-related discrimination was associated with PTSD symptoms ($p < .05$).

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Conclusion—Findings suggest that some types of perceived discrimination contribute to poor mental health among PLWH. Researchers need to take into account intersecting stigmas when developing interventions to improve mental health among PLWH.

Keywords

African American/Black; discrimination; HIV/AIDS; men who have sex with men; mental health

People living with HIV (PLWH) exhibit worse mental health symptoms than do members of the general public. In a nationally representative probability survey of people in care for HIV in the U.S., over a third (36%) screened positive for major depression in the past 12 months (Bing, et al., 2001), versus 7% in a representative U.S. survey (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). A meta-analysis found that PLWH are nearly twice as likely to be diagnosed with major depressive disorder than are those who are HIV-negative (Ciesla & Roberts, 2001). Likewise, the lifetime prevalence of posttraumatic stress disorder (PTSD) among US adults is 7% (Kessler, et al., 2005), compared to 22–60% among convenience samples of PLWH (Gore-Felton & Koopman, 2002; Israelski, et al., 2007; Reisner, Mimiaga, Safren, & Mayer, 2009; Sledjeski, Delahanty, & Bogart, 2005).

Discrimination may be one explanation for the disparities in mental health outcomes between PLWH and general samples. Consistent with biopsychosocial models that conceptualize discrimination as a stressor (Brondolo, Rieppi, Kelly, & Gerin, 2003; Clark, Anderson, Clark, & Williams, 1999; Jackson & Knight, 2006; Landrine & Klonoff, 1996; Williams & Mohammed, 2009), as well as theories of minority stress (Meyer, 2003), a meta-analysis indicated that individuals who experience chronic discrimination are vulnerable to poor mental health (e.g., distress, depression, anxiety) (Pascoe & Smart Richman, 2009). Chronic discrimination creates a hostile living environment that can lead to wear and tear of protective mechanisms and over time, a lower capacity for coping with new stressors.

The relationship between discrimination and mental health has been found among PLWH, as well as within populations of individuals highly affected by HIV, including African Americans (who accounted for 52% of all new infections in 2006–2009) and men who have sex with men (MSM) (who accounted for 71% of new infections among men in 2006–2009) (Centers for Disease Control and Prevention, 2011). Although prior work on PLWH and discrimination has not focused on MSM or Black PLWH specifically, research on PLWH indicates significant associations of depression and PTSD with internalized HIV stigma, i.e., feelings of judgment and shame associated with cultural stereotypes about HIV (Katz & Nevid, 2005; Prachakul, Grant, & Keltner, 2007), and perceptions of discrimination in health care (Bird, Bogart, & Delahanty, 2004). Similarly, across a host of studies, African Americans who have experienced discrimination report greater depression and distress symptoms (Brown, et al., 2000; Jackson, et al., 1996; Jackson & Mustillo, 2001; Landrine & Klonoff, 1996; Pavalko, Mossakowski, & Hamilton, 2003). Further, sexual minorities experience worse mental health outcomes than do heterosexuals, and discrimination is thought to be a contributor to this disparity (Hatzenbuehler, Nolen-Hoeksema, & Dovidio, 2009; Meyer, 2003). For example, reports of discrimination among gay/bisexual men have been related to lower self-esteem and increased suicidal ideation (Huebner, Rebhook, & Kegeles, 2004). In a probability sample of Latino gay men, experiences of discrimination due to sexual orientation and race/ethnicity predicted psychological distress (anxiety, depression) (Diaz, Ayala, & Bein, 2004; Diaz, Ayala, Bein, Henne, & Marin, 2001). A study of PLWH found that trauma symptoms were more severe for MSM than for men who have sex with women, as well as for Asians, Blacks, Latinos, and other races/ethnicities versus Whites, suggesting that discrimination from sexual orientation and/or racial/ethnic minority

group status may weaken PLWH's psychological resources against stressful life situations (Kamen, et al., 2011).

We examined perceived discrimination as a potential contributor to the high rate of psychiatric symptoms among PLWH. We focused on HIV-positive Black MSM, a population disproportionately affected by HIV (Centers for Disease Control and Prevention, 2008; Dean, Steele, Satcher, & Nakashima, 2005), as well as by stigma related to HIV-serostatus, race/ethnicity, and sexual orientation (Bogart, Wagner, Galvan, & Klein, 2010). Black MSM bear the greatest burden of all races/ethnicities and risk groups (Dean, et al., 2005), accounting for ~40% of HIV diagnoses among MSM of all races and ethnicities in 2009 (Centers for Disease Control and Prevention, 2011). Prior research has not examined the combined effects of outright discrimination from a variety of sources (e.g., interpersonal, such as family and friends; traumatic, such as hate crimes; and institutional, such as health care) and due to more than one stigma; nor has research investigated how multiple types of chronic discrimination may interact to influence mental health symptoms related to depression and PTSD. Understanding stigma-related factors related to mental health among PLWH would help clinicians and researchers identify those who are more vulnerable to distress from discrimination and who would benefit from intensive mental health counseling, as well as design interventions to meet their needs.

Methods

Participants and Procedures

Participants were recruited via fliers at three HIV social service agencies and an HIV medical clinic in Los Angeles, CA; fliers advertised a study of "HIV treatment attitudes and behaviors" for African-American/Black men with HIV aged 18 years and older on antiretroviral medications. Interested individuals were screened for eligibility by telephone. After providing written informed consent, 214 eligible participants completed 1-hour audio computer-assisted self-interviews (ACASI) at the social service agencies, of whom 85% ($n = 181$) reported ever having sex with men and whose data were retained for the present analyses. Participants were given an incentive of \$30. Further details of the study methodology are available in prior publications (Bogart, Wagner, et al., 2010; Bogart, Galvan, Wagner, & Klein, 2010; Bogart, Wagner, Galvan, & Banks, 2010; Wagner, Bogart, Galvan, Banks, & Klein, 2011). Although participants were tracked for six months, only baseline data, which contained the variables of interest for the present analysis, are presented here. All study procedures were approved by the institutional review boards (IRBs) of RAND and Charles Drew University of Medicine and Science. A federal Certificate of Confidentiality was obtained.

Measures

Socio-demographic characteristics—Self-reported survey items included date of birth, education (i.e., highest degree earned), income, employment, self-identified sexual orientation, and housing status. Education was dichotomized into low (high school diploma or less) versus greater than high school; annual income into low ($\leq \$5,000$ annually) versus $> \$5,000$ annually; employment into employed full/part-time versus unemployed, on disability, retired, or in school; sexual orientation into heterosexual versus other categories (i.e., gay/same-gender loving, bisexual, not sure or in transition, something else, or don't know); and housing status into stable (rent or own home or apartment, subsidized housing) versus unstable (homeless, living rent-free with friend/relative, residential treatment facility, temporary/transitional housing).

Perceived discrimination—Perceived discrimination was measured with the 30-item Multiple Discrimination Scale (MDS), which assesses discrimination due to three types of co-occurring stigmas among Black MSM (HIV-serostatus, African American/Black race/ethnicity, and sexual orientation) (Bogart, Wagner, et al., 2010). Participants reported whether they experienced 10 different discrimination events in the past year for each of the three discrimination types, with response options “yes” and “no.” MDS items cover violence (verbal, physical, property; e.g., “In the past year, were you physically assaulted or beaten up because someone knew or suspected that you are HIV-positive?”); institutional discrimination (employment, housing, health care; e.g., “In the past year, were you denied a job or did you lose a job because you are Black/African American?”), and interpersonal discrimination (from close others, partners, strangers, in general; e.g., “In the past year, were you ignored, excluded, or avoided by people close to you because someone thought that you were gay?”). The scale uses parallel items to capture discrimination due to HIV-serostatus (MDS-HIV; $\alpha = .85$), African-American/Black race/ethnicity (MDS-Black; $\alpha = .83$), and sexual orientation (MDS-Gay; $\alpha = .86$). The MDS has been shown to have strong construct validity and reliability; it has been significantly associated with validated discrimination and internalized stigma measures from prior research (Berger, Ferrans, & Lashley, 2001; Herek, Gillis, & Cogan, 2009; Kalichman, et al., 2009; Landrine & Klonoff, 1996), as well as disease symptoms and adherence to antiretroviral treatment for HIV (Bogart, Wagner, et al., 2010).

Depression symptoms—Depression symptoms were measured with the validated 8-item brief depression screener from the Medical Outcome Study (Wells, Sturm, Sherbourne, & Meredith, 1996). Items include cognitive (e.g., “I felt depressed”; “I enjoyed life”) and vegetative (e.g., “My sleep was restless”) symptoms. Respondents rated the frequency of symptoms from 1, *rarely or none of the time* to 4, *most or all of the time* in the past week. Using a predetermined algorithm, responses were recoded into a continuous score to vary from 0 to 1; scores greater than .06 are considered to be indicative of a high likelihood of current major depression (Wells, et al., 1996).

Post-traumatic stress disorder (PTSD) symptoms—Participants were first asked whether they experienced any of the following traumatic events in their lifetime: accident, fire, or explosion; natural disaster; physical assault; sexual assault; sexual contact under the age of 18 with someone 5 or more years older; war or military combat; imprisonment; torture; and other. All participants (including those who did not report any traumatic events) were asked to select the worst trauma they experienced, using a list that included all traumas endorsed, as well as “HIV diagnosis.”

Presence and severity of PTSD symptoms in the last month was assessed using the validated Posttraumatic Stress Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997), completed in reference to the “worst” trauma experienced if more than one trauma was endorsed, or in reference to HIV diagnosis if none of the other traumatic events was endorsed. Since all participants experienced at least one trauma (i.e., HIV diagnosis), all participants completed this scale.

Symptoms were grouped into three subscales: re-experiencing (5 items: e.g., nightmares, emotionally upset when reminded of the trauma; $\alpha = .91$); avoidance (7 items: e.g., trying not to think, talk, or have feelings about the trauma; $\alpha = .90$), and arousal (5 items: e.g., easily startled, overly alert; $\alpha = .87$). For each symptom, severity was rated on a scale from 1, *never* to 6, *almost all of the time* in the past month. Subscale items were summed. Respondents were considered to have PTSD if they scored above 1 on at least one re-experiencing symptom, three avoidance symptoms, and two arousal symptoms over the past month.

Data Analytic Strategy

We first conducted bivariate linear regression analyses predicting depression and PTSD subscale scores (arousal, avoidance, and re-experiencing of the worst trauma reported) with each discrimination subscale (MDS-Black, MDS-Gay, MDS-HIV) separately. We also tested multivariate linear regression models in which all three centered discrimination subscales were entered simultaneously. For each outcome, we tested a full interaction model (with all main effects and two- and three-way interactions between the discrimination subscales) in order to examine the relative contribution of each type of discrimination, as well as whether multiple types of discrimination had compounding effects. Using an alpha level of $p < 0.05$, with 181 MSM participants we had $>.80$ power to detect medium effect sizes for the main effects and two- and three-way interactions.

Following standard procedures for interpreting interactions between continuous variables in multiple regression (Aiken & West, 1991), we graphed significant interactions at two levels of each MDS score: low (1 SD below the mean) and high (1 SD above the mean). For any significant three-way interaction, we graphed the regression of mental health symptoms on MDS-Gay at high and low levels of MDS-Black, separately for high and low levels of MDS-HIV. We then used t-tests to test differences between simple slopes from zero, as well as each other (Aiken & West, 1991; Dawson & Richter, 2006). Significant tests of simple slopes versus zero indicate a significant relationship between the predictor (the discrimination type in question) and the dependent variable (i.e., mental health symptoms). We also conducted post-hoc simple main effects t-tests to further interpret the interaction as needed, by comparing differences in mental health symptoms between discrete points on the regression lines.

Results

Descriptive Statistics on Socio-demographic Characteristics, Mental Health, and Perceived Discrimination

As shown in Table 1, the average age of the 181 MSM in the sample was 43 years ($SD = 8$), 40% had annual incomes of \$5,000 or below, 21% had a high school degree or less, and 85% were unemployed. A substantial proportion was in unstable living situations, including in temporary or transitional housing, such as a rehabilitation facility (25%); living with a friend or relative (12%); or homeless (7%); 2% did not specify their living situation. Forty-four percent were living in an owned or rented home, and 10% were in publicly subsidized housing. Thirteen-percent self-identified as heterosexual.

Descriptive statistics indicated that 49% screened positive for depression and 40% screened positive for PTSD; 27% screened positive for both depression and PTSD. PTSD symptoms for the “worst” trauma averaged 5.6 ($SD = 7.0$) for re-experiencing, 9.3 ($SD = 10.1$) for avoidance, and 8.1 ($SD = 7.1$) for arousal. Among those who reported any trauma other than HIV diagnosis ($n = 139$), the most frequent “worst” traumatic event was being diagnosed with HIV (47%), followed by sexual contact as a minor (16%) and being in prison (11%).

Discrimination in the past year was prevalent: 53% had experienced discrimination due to race/ethnicity, 45% due to HIV-serostatus, and 44% due to sexual orientation. The most common forms of race/ethnicity-related discrimination were not being trusted (36%), being treated with hostility or coldness by strangers (28%), and being ignored, excluded, or avoided by close others (18%). The most common forms of HIV-related discrimination were being rejected by potential sexual/romantic partners (29%), being insulted or made fun of (18%), and being ignored, excluded, or avoided by close others (17%). The most common forms of sexual orientation-related discrimination were being insulted or made fun of (34%), being treated with hostility or coldness by strangers (28%), and being ignored, excluded, or

avoided by close others (19%). Traumatic discrimination (i.e., “being physically assaulted or beaten up”) was relatively infrequent: 5% due to HIV-serostatus, 6% due to race/ethnicity, and 6% due to sexual orientation.

Bivariate and Multivariate Relationships of Perceived Discrimination with Depression Symptoms

In bivariate analyses, all three discrimination subscales were significantly related to greater depression symptoms (see Table 2). In a multivariate linear regression model with all main effects and two- and three-way discrimination-related interactions, the two-way MDS-Black by MDS-HIV interaction was significant, as was the three-way MDS-Black by MDS-HIV by MDS-Gay interaction (see Table 3).

Following Aiken and West (1991), we interpreted the highest order significant interaction (i.e., the three-way interaction), because interpretation of lower-order effects may be conditional on higher-order ones. As shown in Figure 1, we graphed the simple slopes of depression on racial discrimination at high and low values of HIV and sexual orientation discrimination. The slope of the fourth line (low HIV and low gay discrimination at both levels of racial discrimination) was significantly different from zero, b (SE) = $-.31$ (.13), $p < .05$, as well as from the slopes of the first line (high HIV and high gay discrimination at both levels of racial discrimination) and the second line (high HIV and low gay discrimination at both levels of racial discrimination), b (SE) = $.40$ (.17), and b (SE) = $.59$ (.23), both p -values $< .05$, respectively.

The significant slope tests indicated that the effects of sexual orientation and HIV discrimination on depression symptoms depended on the extent of racial discrimination experienced. In the absence of sexual orientation and HIV discrimination, racial discrimination was negatively associated with depression symptoms (i.e., the more racial discrimination experienced, the fewer depression symptoms endorsed). This relationship was significantly moderated by HIV discrimination (as indicated by significant differences between slopes): the effect of racial discrimination on lower depression symptoms was reduced to nonsignificance when racial discrimination was experienced in tandem with HIV discrimination (either alone or in combination with sexual orientation discrimination).

We further explored the interaction by conducting seven simple main effects tests to compare individuals who experienced all three types of discrimination at high levels, versus those who experienced high levels of two types or one type only, or who reported no discrimination of any type. Results indicated that individuals who experienced all three types of discrimination had worse depression symptoms than did individuals who experienced only HIV discrimination [b (SE) = 0.41 (0.18), $p = .029$], only racial discrimination [b (SE) = 0.370 (.12), $p = .003$], or both sexual orientation and racial discrimination [b (SE) = 0.19 (0.08), $p = .020$]. Such individuals (i.e., those who experienced all three types) seemed to have similar (i.e., non-significantly different) levels of depression than did individuals who experienced only sexual orientation discrimination [b (SE) = -0.05 (.15), $p = .76$]; who experienced both sexual orientation and HIV discrimination [b (SE) = 0.09 (0.09), $p = .34$]; or who did not experience any discrimination type [b (SE) = -0.31 (.13), $p = .02$]. Those who did not report any discrimination had higher depression scores than did those who experienced racial discrimination only [b (SE) = 0.06 (.09), $p = .51$]. To correct for the possibility of Type I error, we divided the alpha (.05) by the number of simple main effects tests conducted (7); under this more conservative criterion ($\alpha = .007$), only one test was significant – showing significantly higher levels of depression among those who experienced all three types of discrimination, versus those who experienced only racial discrimination.

Bivariate and Multivariate Relationships of Perceived Discrimination with PTSD Symptoms

In bivariate tests, all three types of discrimination were strongly associated with all three PTSD subscales (see Table 2). Individuals who experienced discrimination due to HIV-serostatus, race/ethnicity, and sexual orientation were significantly more likely to report PTSD symptoms of arousal, avoidance, and re-experiencing compared to the others in the sample.

Because none of the interactions were significant in any of the PTSD models, we present the main effects models only in Table 3. Discrimination due to HIV-serostatus was uniquely associated with PTSD symptoms of arousal, avoidance, and re-experiencing, controlling for the effects of the other discrimination types and socio-demographic covariates. HIV-positive Black MSM who experienced HIV-related discrimination were more likely to have symptoms of arousal, avoidance, and re-experiencing. The three covariates were significantly related to mental health as well: being older was associated with lower depression symptoms, being stably housed was related to greater avoidance symptoms, and identifying as heterosexual was related to greater avoidance and re-experiencing symptoms.

Discussion

Consistent with prior research on HIV-positive individuals and MSM (Bing, et al., 2001; Herek & Garnets, 2007), we found mental health issues in substantial percentages of the sample, and that discrimination was associated with mental health outcomes (Diaz, et al., 2001). Our results help to elucidate reasons for mental health disparities, suggesting perceived discrimination as a key contributor. All three types of discrimination were associated with greater PTSD and depressive symptoms when considered in separate bivariate analyses.

Multivariate models for PTSD found that discrimination from HIV-serostatus was the only significant predictor of PTSD symptoms when other types of discrimination were held constant. Because HIV itself is a trauma that can lead to PTSD, experiencing HIV-related discrimination events may serve as a reminder of prior trauma, and extreme cases (e.g., hate crimes) are potentially a form of revictimization, potentially aggravating PTSD symptoms.

Multivariate models for depression uncovered the compounding effects of co-occurring stigmas. Sexual orientation discrimination was associated with depression symptoms regardless of the context of other types of discrimination, and the combination of all three types of discrimination was related to high levels of depression symptoms. In contrast, racial discrimination, when considered in isolation from other forms of perceived discrimination, was associated with *fewer* depression symptoms than when it was in the context of both HIV and sexual orientation discrimination, or HIV discrimination alone.

A potential explanation for the depression results can be drawn from social psychological research on the self-protective properties of stigma (Crocker & Major, 1989; Major & O'Brien, 2005). To protect self-esteem, individuals may attribute mistreatment to racism (and their group membership), rather than an internal characteristic about themselves (such as competence). In support of this theory, research has found that African Americans have higher levels of self-esteem than do Whites, despite experiencing greater discrimination and hardship (Twenge & Crocker, 2002). Moreover, experimental research indicates that individuals who attribute overt mistreatment to discrimination against their group have higher self-esteem than do those who do not make such attributions (Major, Quinton, & Schmader, 2003). The more individuals blame discrimination, versus their own ability, for negative outcomes, the less likely they are to experience negative mental health effects (Major, et al., 2003). Nevertheless, studies examining potential protective coping mechanisms for racism have shown mixed results for depression (Brondolo, Brady Ver

Halen, Pencille, Beatty, & Contrada, 2009). Thus, our findings should be confirmed in future research.

In contrast to racial discrimination, sexual orientation and HIV discrimination were related to greater depression symptoms in the present study. These results are consistent with prior research and theories of minority stress (Hatzenbuehler, et al., 2009; Meyer, 2003) positing that MSM experience excess stress from discrimination, which creates a hostile living environment and in turn, mental disorders. One explanation for the differential effects of sexual orientation and HIV discrimination from racial discrimination is related to the more concealable nature of sexual orientation and HIV-serostatus. Crocker and Major (1989) argued that self-protective mechanisms are not available to individuals who conceal (or do not disclose) their stigma – that is, they cannot attribute mistreatment to discrimination if others are not aware of their stigmatizing characteristic. Accordingly, research shows that people who conceal their sexual orientation experience greater distress and negative affect than those who do not (Beals, Peplau, & Gable, 2009). Similarly, in the present study we found that those MSM who self-identified as heterosexual (and who may have concealed their same-sex sexual behavior) exhibited worse PTSD symptoms of avoidance and re-experiencing. Thus, the self-protective properties of stigma may not extend to HIV and sexual orientation. To test this hypothesis, future studies should assess, perhaps through ecological momentary assessment techniques (Shiffman, Stone, & Hufford, 2008), whether stigmatized characteristics were concealed at the time of the perceived discrimination event.

Clinical interventions are needed that address potential underlying mechanisms for mental health issues with HIV, such as the context of perceived discrimination and stress, and in turn prevent exacerbation of mental health symptoms. It is essential for clinical therapy for depression among PLWH to probe for maladaptive coping responses to discrimination. Due to discrimination and stigma, many PLWH may be isolated and/or receive unsupportive responses from close others; thus, interventions and community programs could develop ways to enhance social support, including support groups, peer counselors, and safe places to discuss HIV. Therapy for PTSD in particular could address ways to cope with interpersonal and institutional discrimination that may stem from the HIV diagnosis, and the consequent shame, self-blame, and humiliation that can result from such mistreatment.

A key limitation of the present work is its reliance on self-reported measures of discrimination, which could not be validated against observational assessments. We used cross-sectional non-experimental methods and thus could not determine the direction of the relationship between discrimination and mental health symptoms. Furthermore, our assessment did not include all possible stigmatized categories in this population, such as low socio-economic status, homelessness, and psychiatric disorders. In addition, the Multiple Discrimination Scale assessed any discrimination rather than frequency of discrimination, which has been shown to be a more sensitive measure (Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006; Shariff-Marco, et al., 2009). Results also should not be generalized to HIV-positive African American men who are not in care or on medication, or to those who are of higher socio-economic status, or to women or other racial/ethnic groups.

In sum, our complex findings demonstrate the critical need to take into account multiple discrimination types for a complete picture of the mental health of individuals with co-occurring stigmas. The stress of discrimination may be associated with detrimental mental health responses among African Americans with HIV, although Black MSM may have greater coping resources for racism than discrimination from other stigmatized social categories. Further, the burgeoning literature on the effects of racial discrimination on poor physical health and health behaviors (Pascoe & Smart Richman, 2009) suggests that such coping resources may not extend to protecting long-term health outcomes. Clinical treatment

plans that do not take into account the context of multiple discriminations experienced by HIV-positive African American MSM may be unsuccessful.

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Figure 1.

Relationship of perceived discrimination to depression symptoms, depicted by a three-way interaction among perceived discrimination due to HIV, sexual orientation, and race/ethnicity. Perceived discrimination was measured with the Multiple Discrimination Scale (MDS). The slope of line 4 is significantly different from zero, b (SE) = $-.31$ (.13), $p < .05$. The slopes of lines 1 and 4, and lines 2 and 4, are significantly different from each other, b (SE) = $.59$ (.23), both p -values $< .05$, respectively.

Table 1

Descriptive Statistics: Socio-demographic Characteristics, Mental Health, and Perceived Discrimination Reports Among 181 HIV-positive Black Men who have Sex with Men (MSM)

Sociodemographics	
Age (M, SD)	43.3 (8.4)
Low Education (%)	21
Low Income (%)	40
Not Employed (%)	85
Heterosexual (%)	13
Unstable Housing (%)	46
Mental Health	
Depression (%)	49
Depression (M, SD)	0.21 (0.27)
PTSD (%)	40
PTSD re-experiencing subscale	5.6 (7.0)
PTSD avoidance subscale	9.3 (10.1)
PTSD arousal subscale	8.1 (7.1)
Discrimination (# Different Events, Past Year)	
Black	
0 (%)	47
1 (%)	18
2 (%)	12
3 – 10 (%)	23
HIV	
0 (%)	55
1 (%)	21
2 (%)	6
3 – 10 (%)	18
Gay	
0 (%)	56
1 (%)	12
2 (%)	8
3 – 10 (%)	24

Table 2

Bivariate Tests of Discrimination with Depression and PTSD Symptoms Among HIV-positive Black Men who have Sex with Men (MSM)

	Depression Symptoms n = 181			PTSD Symptoms: Arousal n = 180			PTSD Symptoms: Avoidance n = 180			PTSD Symptoms: Re-Experiencing n = 178		
Discrimination	<i>b</i> (SE)	R ²	<i>b</i> (SE)	R ²	<i>b</i> (SE)	R ²	<i>b</i> (SE)	R ²	<i>b</i> (SE)	R ²		
Black	0.02 (0.01)*	.03	1.25 (0.23)***	.14	1.95 (0.32)***	.17	1.15 (0.23)***	.13				
HIV	0.03 (0.01)**	.06	1.44 (0.23)***	.18	2.29 (0.32)***	.23	1.36 (0.23)***	.17				
Gay	0.03 (0.01)***	.07	1.30 (0.22)***	.17	2.02 (0.30)***	.20	1.23 (0.22)***	.16				

Note. Sample sizes vary due to a small amount of missing data on the sexual orientation discrimination (MDS-Gay) subscale.

* p < .05.
 ** p < .01.
 *** p < .001.

Table 3

Multivariate Models Predicting Mental Health (Depression and PTSD) Symptoms with Each Discrimination Type Among HIV-positive Black Men who have Sex with Men (MSM)

	Depression <i>b</i> (<i>SE</i>) <i>n</i> = 180	PTSD Symptoms: Arousal <i>b</i> (<i>SE</i>) <i>n</i> = 179	PTSD Symptoms: Avoidance <i>b</i> (<i>SE</i>) <i>n</i> = 179	PTSD Symptoms: Re- Experiencing <i>b</i> (<i>SE</i>) <i>n</i> = 177
Covariates				
Age	−0.01 (0.00)**	−0.10 (0.06) ⁺	−0.02 (0.08)	−0.09 (0.06)
Stable Housing	−0.00 (0.04)	−1.69 (0.96) ⁺	−3.60 (1.31)**	−1.37 (0.95)
Heterosexual	0.09 (0.06)	2.81 (1.43) ⁺	5.31 (1.95)*	3.43 (1.42)*
R ² for Covariates	.05*	.05*	.07***	.05*
Discrimination Main Effects				
Black	−.02 (.04)	0.37 (0.82)	0.37 (1.11)	0.04 (0.81)
HIV	−.00 (.05)	1.76 (0.87)*	2.86 (1.18)*	1.83 (0.86)*
Gay	.08 (.04) ⁺	1.05 (0.85)	1.81 (1.16)	1.14 (0.84)
R ² for Main Effect Set ^a	.03 ^a	.17***	.22***	.17***
Discrimination Interactions				
Black × HIV	.10 (.05)*			
Black × Gay	−.02 (.04)			
HIV × Gay	.03 (.04)			
Black × HIV × Gay	.03 (.01)**			
R ² for Interaction Set	.04			

Note. Because none of the interactions were significant for any of the PTSD scales, only the main effects models are shown for PTSD.

^aR² shown for main effect set in full model including covariates, main effects, and interactions.

⁺ *p* < .10.

* *p* < .05.

** *p* < .01.

*** *p* < .001.