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Ruwenne Moodley Date

A Quantitative Analysis of Mental Health Seeking Attitudes among Young, Black, Gay or Bisexual, Men who have sex with Men living with HIV in Atlanta

By

Ruwenne Moodley
Master of Public Health

Hubert Department of Global Health

_____

Dr. Sophia Hussen
Committee Chair

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By

Ruwenne Moodley

B.A., Emory University, 20218
Emory University
2021

Thesis Committee Chair: Dr. Sophia A. Hussen, MD, MPH

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Abstract

A Quantitative Analysis of Mental Health Seeking Attitudes among Young, Black, Gay or Bisexual, Men who have sex with Men living with HIV in Atlanta

By Ruwenne Moodley

Objective: This thesis seeks to examine the relationships between mental health seeking behaviors, trust in physicians and discrimination in medical settings for YB-GBMSM living with HIV in Atlanta.

Methods: For this study, we used data collected from a cross-sectional survey exploring and quantifying the burden and correlates of phycological symptoms among YB-GBMSM engaged in HIV care in Atlanta. Participants were recruited from two HRSA/Ryan White-funded clinics located in metro Atlanta. The sample population is 100 YB-GBMSM living with HIV in Atlanta. Our main predictor variables were discrimination in medical settings and trust in physicians. We analyzed *general well-being, anxiety and depression, beliefs towards mental illness, substance use and risk, trauma and stress-related symptoms, self-stigma of seeking help*, mental health seeking intentions, HI*V* stigma, and religiosity as covariates. First, we conducted univariate analyses to examine the distribution and characteristics of the dataset. Second, we conducted bivariate analysis to identify significant associations between our primary predictors, demographics, and covariates. Lastly, our multivariate linear regression analysis included *substance use risk, self-stigma of seeking help, organizational and intrinsic religiosity, and trust in physicians*.

Results: In our mental health seeking attitudes' multivariate model, Self-stigma of seeking help was significantly associated with mental health seeking attitudes, and intrinsic religiosity was trending towards a significant (negative) association as well. In our multivariate model using mental health seeking intentions as our outcome, mental health seeking intentions had a statistically significant negative association with mental health seeking attitudes and self-stigma of seeking help.

Conclusions: Our study found that discrimination in medical settings and poor physician trust did not affect attitude and intentions towards mental health care. Our findings suggest self-stigma and religion influence mental health seeking attitudes and intentions.

Policy implications: Future mental health programming should target self-stigma and incorporate religion for YB-GBMSM living with HIV.

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INTRODUCTION

As we seek to improve the health outcomes of those with multiple burdened identities, we must understand how general and specialized healthcare is accessed by young, black, gay, bisexual and men who have sex with men (YB-GBMSM). YB-GBMSM experience disproportionate rates of HIV transmission and breakages in their HIV care continuum. YB-GBMSM living with HIV not only experience worse HIV outcomes but also present with increased risk of mental health disorders due to psychosocial factors related to their identities. These individuals stand at the intersection of racial, sexual, and HIV status discrimination, which challenges equitable general and specialized healthcare access.

While racial, sexual, and HIV stigma-related discrimination have been well understood as barriers to HIV care and adherence, we are interested in how these topics interact in the unique context of HIV and YB-GBMSM in Atlanta. Specifically, we are interested in understanding how adverse experiences with healthcare systems impacts mental health seeking beliefs.

Problem Statement: While mental health seeking is widely studied in the general population, little is known about influences on mental health seeking among YB-GBMSM living with HIV. There is need for a quantitative study on how medical setting discrimination and physician trust correlate with mental health seeking behaviors among YB-GBMSM in Metro-Atlanta.

Purpose Statement: This thesis seeks to examine the relationships between mental health seeking behaviors, trust in physicians and discrimination in medical settings for YB-GBMSM living with HIV in Atlanta.

We hypothesize that among YB-GBMSM:

1. lack of trust in physicians is negatively associated with favorable mental health seeking attitudes and intentions
2. discrimination in medical settings is negatively associated with favorable mental health seeking attitudes and intentions

Good mental health has proven essential to HIV treatment adherence, and thus should be prioritized in the HIV care, particularly among those who have multiply burdened identities, such as YB-GBMSM. Understanding the relationship between healthcare seeking attitudes, physician attitudes, and medical settings for YB-GBMSM living with HIV is incredibly important to inform future health interventions for this population.

LITERATURE REVIEW

In the United States, 1.2 million people are living with HIV.[1] 51% of new HIV cases occur in the South, which is home to only 38% of the US population.[2] [3] In Atlanta, there are an estimated 36,060 people living with HIV, most of whom identified as Black (70.2%) and reported infection through male-male sexual transmission (70.2%).[4] The prevalence of HIV in sexual networks is 36% for Black men who have sex with men and only 4% for white men who have sex with men.[5] Due to this high prevalence and systemic discrimination, Young, Black, Gay, Bisexual, and other Men who have Sex with Men (YB-GBMSM) are vulnerable to HIV in Atlanta.[6] In addition, YB-GBMSM are particularly vulnerable to falling off the HIV care continuum.[7] To this end, understanding how YB-GBMSM individuals experience healthcare is important for improving HIV-related outcomes.

Research shows that race alone does not explain a pre-existing disparity in prevalence of HIV. Other psychosocial factors create disparities in the care cascade, where HIV- and gay-related stigma dissuade patients from participating in preventative interventions.[8] Furthermore, research on HIV treatment and prevention interventions indicates that YB-GBMSM show interest in HIV prevention interventions (Testing and PrEP) but actual uptake is poor.[9] In this study, Fields et al also identified intersectional oppression due to racism, sexual prejudice, HIV stigma, institutional and provider bias, and unresolved health policy as barriers to uptake of these interventions.[8] Stigma, and discrimination due to race, sexual behavior, and HIV status, becomes a triple burden on HIV positive YB-GBMSM and in combination creates an overarching barrier to care. This triple burden puts YB-GBMSM at risk as it affects whether high-quality health services are accessed.[10] For example, discriminatory acts, bullying, and violence create hostile environments which deters YB-GBMSM from accessing HIV healthcare.

While disproportionate healthcare access among YB-GBMSM living with HIV is well researched, how this population experience mental health care is less understood. In this paper, we seek to understand how mental healthcare behaviors are formed among YB-GBMSM living with HIV. Previous literature suggests discrimination in medical settings and poor trust in physicians may correlate with mental healthcare seeking behaviors.[11] [12] Thus, to understand this relationship, we will explore how medical discrimination and physician trust predict the first stages of mental health seeking behaviors.

A. YB-GBMSM AND MENTAL HEALTH

YB-GBMSM not only experience higher incidence of HIV transmission but also increased risk of mental health disorders. YB-GBMSM living with HIV experience a triple burden of stigma due to

their HIV status, race, and sexuality, which may lead to increased incidence of mental health problems.[13] In the US, research on youth living with HIV found 50% of their participants reported clinically significant mental health symptoms.[14] Mental health intersects with HIV/AIDS,[15] where poor mental health negatively disrupts the HIV treatment continuum. [16] [17] [18] Poor mental health also hinders preventative interventions, like HIV testing. [19] [20] Furthermore, poor mental health increases the risk of HIV and vice versa.[21] HIV and mental health are inextricably linked – treating one requires addressing the other.

Due to this potential increased risk of poor mental health, programmatic and community-specific contexts need to be considered for effective intervention and implementation. First, managing mental health disorders is essential to adhering to other treatment plans. Diseases like HIV flourish in the context of the mental health diseases because of low adherence to medications like ARVs and PrEP. [22] [23] Likewise, regular testing does not occur.[24] Thus, we need to promote mental health interventions to augment HIV interventions.[25]

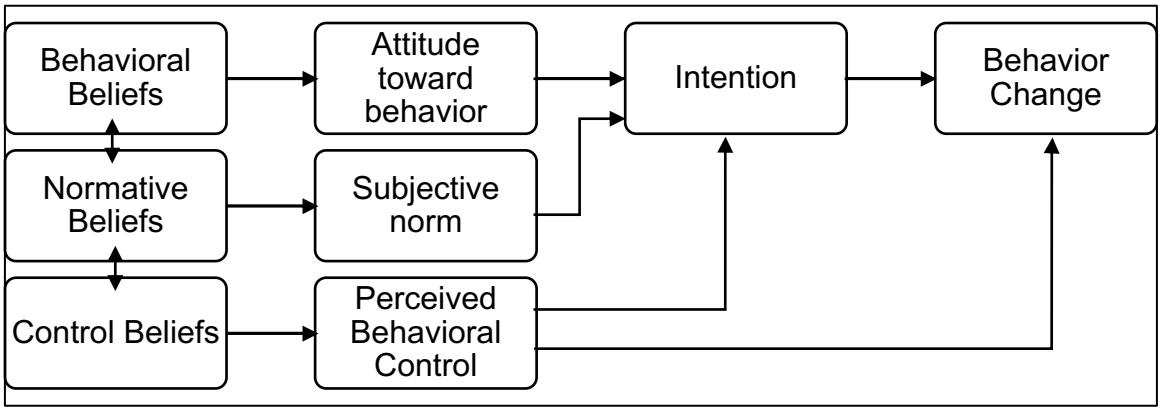
Second, mental healthcare may not be accessed because of community-specific discrimination and stigma against YB-GBMSM .[26] Community judgement in seeking mental health services and lack of culturally- and gender-specific clinical environments encourage YB-GBMSM to avoid mental health care and hostile environments. [27] [28] To this end, we need to explore the community-specific traits or experiences which effect YB-GBMSM's mental health behaviors. Among those with mental illnesses, only 32% of black Americans are receiving treatment compared to 50% of white Americans.[29] While we know this utilization rate at the national level, we seek to understand the nuanced context of different Black American communities, namely YB-GBMSM living with HIV in Atlanta.

Mental health service utilization relies not only on effective program design but also positive mental health seeking behaviors among the population we wish to reach. In this paper, we seek to examine the mental health seeking attitudes and intentions among YB-GBMSM living with HIV in Metro Atlanta.

B. Exploring Health Seeking Attitudes and Intentions

To understand how mental health care is accessed by YB-GBMSM, we dissected mental health seeking behavior stages. To analyze mental health seeking behavior we will adopt the Theory of Planned Behavior (TPB) for our analysis, which is summarized in Figure 1. Understanding behavior change requires acknowledging attitudes towards the behavior, intention to act out the behavior, and finally actioning the behavior. According to the TPB, actual behavior can be predicted by one's attitude and intentions towards that behavior.[30] Attitudes and intentions are heavily dependent on the social and cultural context of the individual and could differ from one another. Human behavior is guided by behavioral beliefs (consequences associated with the behavior), normative beliefs (behaviors of significant others), and control beliefs (factors that facilitate or impede behavior).[31] Behavioral, normative, and control beliefs manifest in one's attitude and intention towards that behavior. Figure 1 displays the temporal relationship described between stages. Namely, we see how attitudes precede intentions and acts as a mediator.[32] [33]

Figure 1: Diagram of the Theory of Planned Behavior's Stages



Attitudes and intentions have proven to predict healthcare utilization in implementation research. Intentions have proven to translate into healthcare use,[34] thus analyzing intentions is useful. Furthermore, attitudes prove to predict intentions.[35] Among college students, health seeking attitudes anticipate help-seeking intentions.[36] For mental health in particular, resource utilization was significantly predicted by individual's mental health seeking attitudes among rural and nonrural cancer survivors.[37] In general, analyzing attitudes is essential to predict intentions and mental health resource use. This correlation among YB-GBMSM living with HIV is yet to be proven.

Seeing as attitudes precede intentions in the TPB stages (Figure 1), we assume there is a close correlation between the two. However, due to the temporal relationship between attitudes and intention, [38] [39] it is also possible that social conditioning alters beliefs in-between the two stages, so that they might not necessarily be correlated, and one may not always function as proxy for the other. Thus, with any behavioral analysis, we need to analyze attitudes and intentions as separate outcomes. To analyze how YB-GBMSM seek mental healthcare, we need to further investigate mental health seeking attitudes and mental health seeking intentions.

C. Predictors of Mental Health Seeking Attitudes and Intentions

Seeing as one's attitude towards mental health and their intention to seek help is dependent upon the cultural context and societal beliefs, understanding the context of an individual helps predict their attitudes towards seeking help. Stigma and discrimination due to the HIV, racial, and sexual context surrounding YB-GBMSM heavily impact mental health seeking attitudes and intentions. While discrimination, owing to systemic racism, is well documented when understanding healthcare inequity and social determinants,[40] [41] [42] this study is concerned with how medical systems serve YB-GBMSM in need of mental health services.

Medical Discrimination

Discrimination increases an individual's risk of poorer physical and mental health, and thus exacerbates health inequities impacting racially oppressed population.[43] More specifically, discrimination experienced in medical settings can influence subsequent health seeking behaviors, decrease access to healthcare, and impact health outcomes as a result.[44] [45] [46] Health system discrimination, including provider bias, stereotyping, and prejudices, is therefore an important contributor to racial and ethnic healthcare disparities.[47] Experiences with discrimination affect one's trust in the medical system and affect adherence and linkage among black Americans.[48] [49] In general, people who experience discrimination are less likely to seek out further medical help.[50] black American adults, specifically those who experience discrimination, are more likely to delay seeking medical care and poorly adhere to their treatment compared to Caucasian adults.[51]

Several studies have linked medical discrimination to poor health outcomes among minority populations. Black patients report more racial and ethnic bias in their healthcare experiences compared to their white counterparts.[52] In 2002, Nelson found an association between

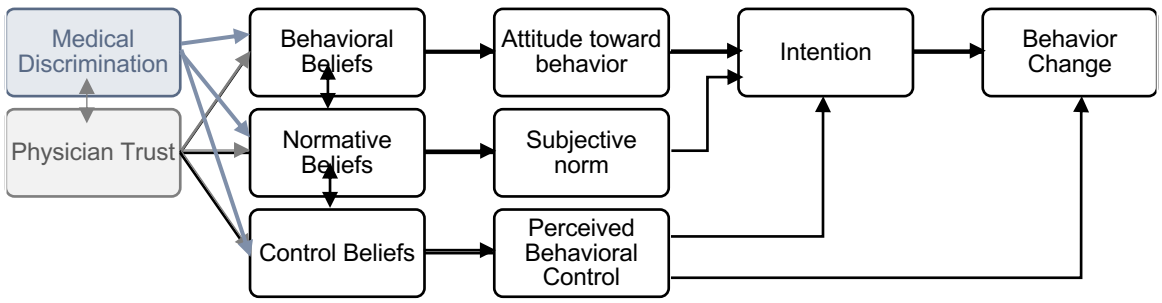
discrimination among psychiatric patients and smoking among minority patients.[53] Among diabetic patients, self-reported medical discrimination due to race was associated with worse diabetes care and more complications.[54] Among middle-aged black American Women, chronic exposure to discrimination proved to be associated with coronary artery calcification.[55] Systemic and internalized racism can manifest in medical discrimination. For example, racial discrimination leading to inadequate healthcare, a contributor to poorer blood pressure control among black populations compared to white populations.[56]

YB-GBMSM exist in the unique intersection of racial, sexual, and HIV discrimination, which is compounded but social economic factors. Intersectionality, while intended to describe the crossroad of racial and sexual discrimination among black American women, lends itself to populations who experience multifactored discrimination, like YB-GBMSM.[57] Among YB-GBMSM, racial and sexuality stigma interact with HIV stigma and social context (eg. SES), rendering multiply burdened populations. Majority of black Americans experiences both race-based and SES-based discrimination.[58] Experiences with discrimination changes the autonomy and decision-making of the patients among black Americans,[59] which prevents medical intervention uptake. Internalized racial discrimination due to race is well understood. However, the impact of discrimination due to the intersectionality of HIV status, race, and sexuality on health outcomes is yet to be explored. We are yet to understand how discrimination impacts health seeking behaviors among those with multiply burdened identities, such as YB-GBMSM living with HIV.

TRUST IN PHYSICIANS

Medical discrimination often manifests in poor physician trust, which poses a barrier to accessing HIV healthcare for YB-GBMSM. For example, Sullivan, et al found that one study of black MSM showed that lower levels of physician trust are associated with decreased PrEP uptake.[60] Qualitative research shows individuals who experience racial and sexual orientation stigma from health care providers also report mistrust of medical establishments.[61] This would suggest that stigma and discrimination could result in undermining health-conducive resources and contribute to poorer HIV outcomes.[62] In Figure 2, we see the how physician trust and medical discrimination influence YB-GBMSM's mental health seeking beliefs. These beliefs then influence mental health seeking attitudes and intentions.

Figure 2: Diagram of Medical Discrimination and Physician Trust in the Theory of Planned Behavior



Physician trust is formed through many stages and interactions[63] and is necessary to form positive patient-physician alliance, which encourages patients to adhere to their prescribed treatment plan[64] and to promote future medical care utilization. Physician trust refers to a patient's trust in their physician to provide care that will be beneficial and not harmful for their medical condition.[65] This trust determines the patient's willingness to utilize and adhere to HIV preventative and diagnostic

treatment, especially when there is a perceived risk such as social stigma and treatment side effects.[66] [67] [68] [69] It follows that poor trust in one's physician stems from physician stigma and often results in poor clinical outcomes, like viral non-suppression and poor mental health outcomes.[70]

In the US, these poor outcomes are compounded by racial disparities, where black populations are less likely to trust their doctors compared to white populations. [71] [72] [73] Individuals living with HIV who have trust in their care providers show increased HIV-related out-patient clinic visits, ARV use, and mental health. [74] MSM populations living with HIV have reported low trust in physicians.[75] Among black MSM living with HIV, stigma from healthcare providers translated into low trust in physicians and longer gaps in-between HIV treatment appointments.[76] [77]

While the association between trust in physicians and adherence is understood, to mitigate the disproportionate rates of physician trust we must explore how it relates to help seeking attitudes. The relationship between physician trust and mental help seeking attitudes is unclear from the literature. Hence, we hypothesize that physician trust impacts beliefs around help seeking behaviors, thus impacting health seeking attitudes and intentions. In the specific context of YBGMSM living with HIV in Atlanta, the relationship between medical discrimination and physician trust needs to be explored.

This study seeks to understand how discrimination and stigma in medical settings impact one's attitude and intentions towards mental health seeking behavior. We aim to explore this relationship in the context of the psychosocial factors which could complicate this relationship, such as existing mental health disorders, general well-being, perceived stigma, substance use, and influential social and physical demographic factors (age, income, incarceration, education).

METHODS

STUDY DESIGN: For this study, we used data collected from a cross-sectional survey exploring and quantifying the burden and correlates of phycological symptoms among YB-GBMSM engaged in HIV care. This cross-sectional survey was conducted among YB-GBMSM living with HIV in Atlanta. YB-GBMSM living with HIV were recruited and surveyed from two HIV clinics in Atlanta from November 2019 to July 2020. All recruitment occurred with *the consent of the patients as well as the* clinical provider*s* and staff. Recruited clinic patients were approached directly before or after an appointment or contacted by phone when referred by clinic staff. Those recruited directly from the clinic completed an electronic informed consent form and self-administered the survey on a study-specific laptop or tablet. Those recruited by phone were screened according to our eligibility criteria and emailed a link to a REDCap[78] survey for self-administration. Upon completing the survey, participants received a $25 gift card. This study was approved by the Emory Institutional Review Board and Grady Research Oversight Committee.

SETTING: The study was conducted in Atlanta, Georgia, *owing* to Atlanta's high HIV prevalence. Participants were recruited from two HRSA/Ryan White-funded clinics located in metro Atlanta. The Grady Infectious Disease Program (IDP) clinic and the Emory University Hospital Midtown Infectious Disease (EUHM) clinic were selected due to their vast differences in patient demographics. The two clinics represent diverse sizes, patient socioeconomic status, staffing, and current HIV- Mental Health integration models. The IDP serve*s* 6,300 patients, is primarily for the uninsured, and is affiliated with a large public safety net hospital. The EUHM serves 1,950 patients who are covered by Ryan White funding or private insurance and is a university-affiliated hospital-based infectious disease clinic.

PARTICIPANTS: Only young black gay/bisexual/MSM living with HIV in Atlanta were eligible for the survey. Participants were screened and selected upon this eligibility criteria. Thus, the sample population is 100 YB-GBMSM living with HIV in Atlanta.

DATA SOURCES: For this study, our primary outcome is Mental Health Seeking Attitudes. While the survey data included many correlates of psychological symptoms among the sample of YB-GBMSM living with HIV care, for the purpose of this study only variables related to our primary outcome were studied. Our main predictor variables were discrimination in medical settings and trust in physicians. We analyzed *general well-being, anxiety and depression, beliefs towards mental illness, substance use and risk, trauma and stress-related symptoms, self-stigma of seeking help*, mental health seeking intentions, HI*V* stigma, and religiosity as covariates. Our demographic variables included age, nationality, sexual orientation, and incarcerat*ion*. Highest level of education, employment status, annual income, homelessness, and residence type *were* our socioeconomic measures.

VARIABLES AND MEASUREMENT:

Demographic Variables: Demographic variables include *age,* sexual orientation, gender identity, nationality, education, employment status, annual income, homelessness, residence, and incarceration. Participants provided their date of birth to ascertain age. Participants self-described sexual orientation and gender identity. Nationality was reported as born in the USA or born elsewhere. Current school enrollment and highest education level (High school or less, some college or tech school, Bachelor's degree or higher) measured education. Employment status was recorded as employed Full-time, Part-time, or Unemployed. Annual income was recorded by four categories: Less than $10,000, $10,000-$19,999, $20,000-$29,999, $30,000 or more. To

understand current living situations, participants were asked if they were homeless in the past 3 months, their residence type (Own home, Rental, Parent's home, Other), and how many times they had moved in the past 6 months (Never, Once, Twice, More than twice). Incarceration was captured as Never, incarcerated in the past six months, and Incarcerated more than six months ago.

Health Seeking Attitude and Intentions (Outcome Variables): The Mental Health Seeking Attitudes Scale (MHSAS) and the Mental Health Seeking Intentions Scale (MHSIS) were used to measure the attitudes and intentions of participants when seeking mental health treatment separately.[79] Both scales ask participants to rank their agreement to health seeking behavior statements. The MHSIS is a 3-item scale using 7-point Likert scales, where 1 is Extremely unlikely and 7 is Extremely likely. A single mean score from the 3-item is calculated to measure mental health seeking intentions. The MHSAS is a 9-item scale using 7-point semantic differential scales, where each end of the scale is a bipolar adjective (e.g good v bad). A single mean score of the 9-items is used to measure mental health seeking attitudes. A higher MHSIS or MHSAS mean score translates to more favorable mental health seeking attitudes or intentions. Both MHSAS and MHSIS were continuous variables in this study. The reliability in our sample was good (*alpha = 0.97* and *alpha = 0.91*, respectively).

Physician Trust (Main Predictor Variable): The Trust in Physician Scale (TIPS) measures how participants feel about their physicians. All 11-items are asked using a 5-point Likert scale, where 1 is Totally disagree and 5 is Totally agree. While this scale was originally developed for middle aged Caucasian sample in California, it is reliable and valid.[80] A single mean score from the 11-items is calculated and used as the TIPS score. The higher the TIPS score the more trust in

physician was experienced. The TIPS score variable was a continuous variable in this study. It was also found reliable in our sample (*alpha = 0.78*).

Discrimination in Medical Settings (Main Predictor Variable): To measure discrimination experienced in medical settings, we used the Discrimination in Medical Settings (DMS) scale. The DMS scale was adapted from the Every Day Discrimination Scale to focus on discrimination in medical settings among Black Americans.[81] [82] The DMS scale is a 7-item scale using a 5-point Likert scale (1=Never and 5=Always), which asks participants to rate the frequency of discriminatory experiences in medical settings. A single mean was calculated using the 7-item scales to generate a DMS scale score. Lower DMS scale scores correspond with less discrimination experienced in medical settings. The DMS scale score was a continuous variable in this study. The reliability of this scale was high in our sample (*alpha = 0.95*).

Anxiety (Covariate): To measure anxiety Symptoms, the Generalized Anxiety Disorder-7 (GAD-7) scale was used.[83] The GAD is a 7-item scale and uses Likert scales in each item, where 0 is Not at all, 1 is Several Days, 2 is Over half the days, and 3 is Nearly every day. To get a total GAD scale score we summed each item score. If the total score was between 0 and 4 then the participant was characterized as having minimal anxiety. Having a score between 5 and 9 equates to mild anxiety, between 10 and 14 equates to moderate anxiety and above 15 indicates severe anxiety. The GAD-7 scale has proven valid and reliable[84] among similar study populations.[85] Our sample also found the GAD scale very reliable (*alpha = 0.94)*.

General Well-Being (Covariate): To assess psychological well-being and distress over the past month, the general well-being schedule (GWB) was used. The GWB schedule includes 18 items.[86]

The first 14 items use a six-point Likert scale. The last four items use a 0-10 rating scale. All 18 items are summed, where lower scores represent greater distress. Traditionally, scores can be categorized in the following ranges: 0-25 is Severe Distress, 26-40 is Serious Distress, 41-55 is Distress, 56-70 is Stress Problem, 71-75 is Marginal, 76-80 is Low Positive, and 81-110 is Positive Well-Being. For the purpose of this study, the GWB schedule scores were categorized into four levels carrying the same cutoffs: Severe/Serious/Distress, Stress Problem, Marginal/Low Positive, and Positive Well-being. The GWB schedule has proven reliable in other studies[87] including among black women.[88] The GWB proves very reliable among our study population as well (*0.79*).

Substance Use (Covariate): To evaluate substance use and risk, two screening tests were used. Substance use was measured by the National Institute on Drug (NIDA) Quick Screen V1.0. NIDA is a dichotomized (yes/no) four item screening survey that asks about the frequency and use of alcohol, tobacco, prescription drugs for non-medical reasons and illegal drugs in past year.[89] Substance use risk was measured using the NIDA-Modified Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) V2.0, which reports substance use in the past year.[90] The ASSIST screening captures cannabis, cocaine, prescription stimulants, methamphetamine, inhalants, sedatives, hallucinogens, street opioids, prescription opioids, and other not-listed substances use in the past three months. By summing these two screening tests, a Single Substance Involvement Score (SSIS) was calculated. The SSIS is traditionally understood in three categories: 0-3 is Lower risk, 4-26 is Moderate risk, and 27+ is high risk. For the purpose of this study we dichotomized SSIS where any score below 3 is considered no risk of substance abuse and scores 4+ are considered at risk for substance abuse.

Trauma and Stress-Related Symptoms (Covariate): We measured post-traumatic stress disorders(PTSD) as an indicator of trauma and stress-related symptoms. To measure PTSD, we used the abbreviated PTSD Checklist- civilian version (PCL-C). We used the two-item version of the PCL-C, which has been effectively used in primary care clinic settings in the past.[91] In the two-item version, the first item asks about repeated/disturbing thoughts or memories and the second item asks about feeling upset when reminded of stressful events from the past. These two items are asked on a Likert scale ranging from 1 ('Not at All') to 5 ('Extremely'). The 2 items are averaged to generate a single mean score. Scores above 4 is consistent with a PTSD diagnosis. For the purpose of this study, the PTSD variable is dichotomized into those with a diagnosis (Score>4) and those without (score<4). This scale has proven reliable in other studies[92] and in this study sample (*alpha = 0.82*).

Beliefs toward Mental Illness (Covariate): To measure negative stereotypical views of mental illness among participants, the Beliefs Towards Mental Illness (BMI) Scale was used.[93] The BMI scale includes 21-items that use a 6-point Likert scale, where 0 is Completely disagree and 5 is Completely agree. This scale measures and predicts treatment seeking behaviors among multiple cultural groups. A single mean score is calculated by averaging the 21 items. For the purpose of this study, the BMI mean score variable was a continuous variable, where higher BMI mean scores reflect more negative beliefs about mental illness. Reliability of this scale was high among our sample (*alpha = 0.93*).

Perceived Stigma of Seeking Help: Negative health seeking behaviors due to perceived stigma of seeking treatment was measured using the Self-Stigma of Seeking Help (SSOSH) scale.[94] The SSOSH is a 10-item scale using 5-point Likert scales, where 1 is Strongly disagree and 5 is

Strongly agree. Each item measures how participants' self-esteems would be negatively impacted by seeking out mental health care. A single mean score was calculated by averaging the 10 items. The SSOSH mean score was a continuous variable in this study. Higher mean scores correlate with higher perceived stigma of seeking help. Reliability for this scale was good in our sample (alpha = *0.71*).

HIV Stigma (Covariate): To quantify HIV Stigma experienced, we used the revised HIV Stigma scale for youth.[95] The HIV Stigma scale is a 10-item scale which utilizes 4-point Likert scales, where 1 is Strongly agree and 4 is Strongly disagree. Participants were asked to rate their agreement with statements about attitudes towards people with HIV, disclosure concerns, and negative self-image using the Liker scale. All items were averaged to generate a single HIS stigma score. The HIV Stigma mean score variable was a continuous variable for this analysis. Higher mean scores translate into more HIV stigma experienced. Reliability in our sample was good (*alpha = 0.90*).

Depression Symptoms (Covariate): To measure depressive symptoms, the Centers for Epidemiologic Studies Depression Revised (CESD-R) scale was used.[96] [97] The CESD-R scale characterizes depressive symptoms into nine symptom groups: Sadness (Dysphoria), Loss of Interest (Ahedonia), Appetite, Sleep, Thinking/Concentration, Guilt, Fatigue, Agitation, and Suicidal Ideation. Participants answered the 20-item scale which describes the frequency of depressive symptoms. Each question used a 4-point Likert scale where 0 is Not at all or Less than 1-day last week, 1 is 1-2 days, 2 is 3-7 days, and 3 is 5-7 days or nearly every day for 2 weeks. Using the numerical values, each Likert scale was summed to generate a CESD scale score. Scores of 16 or higher aligns with clinically significant depressive symptoms. For the purpose of this

study, the CESD scale score was a continuous variable, where higher scores indicated higher levels of depressions. Previous literature suggests the CESD-R scale is reliable and valid [98] among people living with HIV.[99] [100] The CESD-R was also found to be reliable in our sample (*alpha = 0.97*).

Religiosity (Covariate): The Duke University Religion Index (DUREL) was used to measure religiosity. DUREL is a five-item scale that measures three dimensions of religiosity: organizational religious activity, non-organizational religious activity, and intrinsic or subjective religiosity.[101] Two items use a 6-point Likert scale, and three items use a 5-point Likert scale. The items are summed to provide scores for each of the dimensions. The summed score variable was a continuous variable in this study, where higher scores correlate with higher experiences in the respective religiosity dimension. Reliability in our sample was *good* (*alpha = 0.72*).

STATISTICAL METHODS:

Our study presents selection bias as convenience sampling was used during recruitment. While convenience sampling may hinder representation, the homogeneity of our sample ensures generalizability to similar populations.

To conduct our statical testing SAS v 9.4 was used. Before modeling, the data was examined for normality and kurtosis (evidence of skewness). Some scale score presented evidence for skewness; however, this was due to single-item non-response. To understand the relationship between this study's mental health seeking attitudes and intentions (MHSAS & MHSIS), predictors, and covariates, we employed linear regression modeling. Seeing as MHSAS and MHSIS are continuous, linear regressions were appropriate. To conduct a linear regression the following assumptions were tested and met: linearity, independence, multivariate normality, no or little

multicollinearity, no autocorrelation, and sample size is >=100. All non-missing data were excluded from our analysis.

In our primary analysis, we are looking at predictors of mental health seeking attitudes. First, we conducted univariate analyses to examine the distribution and characteristics of the dataset. Univariate analyses captured measures of central tendency and variability of all variables (Table 1). Second, we conducted bivariate analysis to identify significant associations between our primary predictors, demographics, and covariates. Our bivariate analysis included unadjusted linear regression modeling with MHSAS as the outcome and every other variable as the predictor separately. Associations that were significant at the 80% confidence limit ($p<0.20$) were retained in the multivariate model. Using these significant associations and previous literature, the multivariate linear regression models included *substance use risk, self-stigma of seeking help, organizational and intrinsic religiosity, and trust in physicians*.

BIAS: A potential threat to internal validity could be confounding. However, the sample's eligibility criteria mitigates many confounders. Race, age, gender, sexuality, and location will not confound our results as the sample is restricted to young, black, men-who-have-sex-with-men in Atlanta.

To mitigate non-response bias, the hot deck imputation was used to address all missing data. Under the hot deck protocol, missing data was populated by replacing a non-response item with a response from a similar participant.[102]

SENSITIVITY ANALYSIS: Additionally, we conducted a secondary sensitivity analysis. In our main models, we assume MHSAS correlation with MHSIS is so strong that they can be used

interchangeable. However, according to the Theory of Planned Behavior attitudes proceed intentions. Due to this time related relationship, the studies' predictors may change after attitudes are formed but before intentions are set. To acknowledge this subtle difference between attitudes and intentions, we conducted the same analysis on MHSIS as we did on MHSAS. MHSIS was analyzed as the primary outcome in our secondary analysis. We redid bivariate and multivariate analysis according. From our bivariate analysis we found significant associations between MHSIS and *education, substance use risk, beliefs in mental health, mental health seeking attitudes, self-stigma of seeking help, trust in physicians and intrinsic religiosity*. These covariates were included *in* our multivariate model. To control for MHSAS in this analysis we included it in our model, along with Self-stigma of seeking mental health as this was found significant in our multivariate model from our primary analysis.

RESULTS

All characteristics from the 100 YB-GBMSM participants are summarized in Table 1. The average age was 25.19 years old (SD = 5.02 years). Ninety-nine percent of participants self-identified as men, with 78% of participants identifying as gay/ homosexual/ same gender loving (SGL) and 22% of participants identifying as straight/ heterosexual. Fifty-two percent of participants had received a high school or less education, 33% had received some college or tech school education, and 15% had received a bachelor's degree or higher. At the time of the survey, 75% of participants were currently enrolled in school. 38% were employed full time, 20% were employed part time, and 42% of participants were unemployed. Most participants earned less than $10,000 annually (39%). 85% of participants reported being homeless in the past three months. 51% of participants

reported being incarcerated, where 13% had been incarcerated within the past six months and 38% had been incarcerated more than six months ago.

Participants general wellbeing were classified as severe/serious/distress (35% of participants), stress problem (37% of participants), marginal/low positive (13% off participants), and positive well-being (15% of participants). Thirteen percent of participants were at risk for substance use. Fifty seven percent of participants experienced PTSD symptoms

Table 1: Baseline Characteristics of YB-GBMSM living with HIV in Atlanta, CHIMES dataset (n=100)

	N	PREVALENCE OR MEAN OF EACH CHARACTERISTIC	
		%/MEAN	STD ERR/STD DEV
TOTAL SAMPLE			
AGE (IN YEARS)	100		
18-25		51	5.02
26-30		49	5.02
GENDER	100		
MAN		99	1
OTHER		1	1
COUNTRY OF BIRTH	99		
USA		97	1.42
OTHER		2	1.42
SEXUAL IDENTITY	100		
GAY/ HOMOSEXUAL/SAME GENDER LOVING (SGL)		78	4.16
STRAIGHT/ HETEROSEXUAL		22	4.16
CURRENTLY ENROLLED IN SCHOOL			
YES		75	4.35
NO		25	4.35
HIGHEST EDUCATION	100		

HIGH SCHOOL OR LESS		52	5.02
SOME COLLEGE OR TECH SCHOOL		33	4.73
BACHELOR'S DEGREE OR HIGHER		15	3.59
EMPLOYMENT STATUS			
FULL TIME EMPLOYED	100	38	4.88
PART TIME EMPLOYED		20	4.02
UNEMPLOYED		42	4.96
ANNUAL INCOME	100		
LESS THAN $10,000		39	4.9
$10,000 - $19,999		16	3.68
$20,000 - $29,999		20	4.02
$30,000 OR MORE		25	4.35
HOMELESSNESS IN PAST 3 MONTHS	100		
YES		85	3.59
NO		15	3.59
RESIDENCE	100		
OWN HOME		13	3.38
RENTAL		40	4.92
PARENTS HOME		18	3.86
OTHER		29	4.56
NO. MOVES IN PAST 6 MONTHS	100		
NEVER		51	5.02
ONCE		24	4.29
TWICE		14	3.49
MORE THAN TWICE		11	3.14
EVER BEEN INCARCERATED:	100		
NEVER		49	5.02
INCARCERATED (NOT IN THE PAST SIX MONTHS)		38	4.88
INCARCERATED (IN THE PAT SIX MONTHS)		13	3.38
GENERALIZED ANXIETY DISORDER 7-ITEM (GAD-7) SCALE	100		

NO SYMPTOMS OF ANXIETY		55	5
MILD ANXIETY		18	3.86
MODERATE ANXIETY		13	3.38
SEVERE ANXIETY		14	3.49
GENERAL WELLBEING SCALE	100		
SEVERE/SERIOUS/DISTRESS		35	4.79
STRESS PROBLEM		37	4.85
MARGINAL/LOW POSITIVE		13	3.38
POSITIVE WELL-BEING		15	3.59
SUBSTANCE USE RISK	100		
YES		13	3.38
NO		87	3.38
TRAUMA RELATED SYMPTOMS (PTSD CHECKLIST-CIVILIAN VERSION)	100		
YES		57	4.98
NO		43	4.98
BELIEFS IN MENTAL HEALTH SCALE	100	1.67	0.95
MENTAL HEALTH SEEKING ATTITUDES SCALE	100	3.83	0.26
MENTAL HEALTH SEEKING INTENTIONS SCLAE	100	5.57	1.63
SELF STIGMA OF SEEKING HELP SCALE	100	2.35	0.68
TRUST IN PHYSICIAN SCALE	100	3.95	0.91
DISCRIMINATION IN MEDICAL SETTING SCALE	100	1.55	0.85
HIV STIGMA SCALE	100	2.33	0.8
DEPRESSION SCALE	86	12.53	13.33
DUKE UNIVERSITY RELIGION INDEX- ORGANIZATIONAL RELIGIOUS ACTIVITY	100	2.3	1.3
DUKE UNIVERSITY RELIGION INDEX - NON ORGANIZATIONAL RELIGIOUS ACTIVITY	100	2.29	1.63

DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY	100	11.27	3.34

*% and std err given for categorical predictors. Mean and std dev given for continuous predictors.

A. Bivariate Mental Health Seeking Attitudes Analysis

In our bivariate analysis of mental health seeking attitudes (Table 2), mental health seeking attitudes had a statistically significant negative association with trust in physicians and mental health seeking intentions. Mental health seeking attitudes also had negative associations with intrinsic religiosity and organizational religiosity, and self-stigma of seeking help.

There was no significant association between mental health seeking attitudes and age, gender, nationality, sexual orientation, education, employment status, annual income, homelessness, residence, incarceration, generalized anxiety, general well-being, PTSD, beliefs in mental health scale, HIV stigma, depression, and non-organizational religiosity in our unadjusted model.

Table 2: Significant Results from Bivariate Linear Regression Analysis of Variables Potentially Associated with Mental Health Seeking Attitudes among YB-GBMSM living with HIV in Atlanta, CHIMES dataset (n=100) (See Appendix A for full results)

	COEFFICIENT (B)	**B1 ± SE**	***MODEL BASED MEAN (95% CI)***	***P-VALUE***	***P-VALUE (OVERALL)***
OVERALL	*3.83*	-	*3.83 (3.78 - 3.88)*	-	-
SUBSTANCE USE RISK**					
YES	**3.94**	**-0.12 ± 0.077**	**3.82 (3.76 - 3.87)**	**0.112**	0.112
NO	*ref*	*ref*	3.94 (3.8 - 4.083)	*ref*	
MENTAL HEALTH SEEKING INTENTIONS SCALE*	**4.17**	**-0.061 ± 0.015**	**4.18 (1.003 - 4.35)**	**<0.0001**	**<0.0001**

SELF STIGMA OF SEEKING HELP SCALE*	**3.57**	**0.11 ± 0.27**	**3.58 (3.41 - 3.75)**	**0.0033**	**0.0033**
TRUST IN PHYSICIAN SCALE*	**4.06**	**-0.058 ± 0.29**	**4.063 (3.83 - 4.3)**	**0.047**	**0.047**
DISCRIMINATION IN MEDICAL SETTING SCALE	3.82	0.008 ± 0.031	3.82 (3.71 - 3.93)	0.798	0.798
DUKE UNIVERSITY RELIGION INDEX-ORGANIZATIONAL RELIGIOUS ACTIVITY*	3.94	-0.046 ± 0.02	3.94 (3.84 - 4.05)	0.021	0.021
DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY*	4.05	-0.019 ± 0.0077	4.05 (3.87 - 4.23)	0.013	0.013

*Significant when $p<0.05$

**Significant when $p<0.2$

B. Multivariate Mental Health Seeking Attitudes Analysis

In our mental health seeking attitudes' multivariate model (Table 3), we analyzed predictors found significant during bivariate analysis when $p<0.20$. Self-stigma of seeking help was significantly associated with mental health seeking attitudes, and intrinsic religiosity was trended towards a significant (negative) association as well.

In our adjusted model, substance use risk, trust in physicians, and organizational religiosity were not associated with mental health seeking attitudes.

Table 3: Multivariate Linear Regression Analysis of Variables Associated with Mental Health Seeking Attitudes among YB-GBMSM living with HIV in Atlanta, CHIMES dataset (n=100)

	COEFFICIENT (B)	**B1 ± SE**	*MODEL BASED MEAN (95% CI)*	*P-VALUE*	*P-VALUE (OVERALL)*
OVERALL	*3.98*	-	*3.94 (3.56 - 4.32)*	-	-
SUBSTANCE USE RISK					
YES	*3.98*	-0.08 ± 0.076	3.82 (3.77 - 3.87)	0.29	0.29
NO	*ref*	*ref*	3.90 (3.76 - 4.04)	*ref*	
SELF STIGMA OF SEEKING HELP SCALE*	***3.98***	**0.083 ± 0.041**	**3.95 (3.58 - 4.32)**	**0.042**	**0.042**
TRUST IN PHYSICIAN SCALE	*3.98*	-0.014 ± 0.03	3.94 (3.56 - 4.32)	0.65	0.65
DUKE UNIVERSITY RELIGION INDEX-ORGANIZATIONAL RELIGIOUS ACTIVITY*8	*3.98*	-0.018 ± 0.021	3.94 (3.56 - 4.32)	0.38	0.38
DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY	*3.98*	-0.016 ± 0.0081	3.94 (3.56 - 4.32)	0.054	0.054

*Significant when $p<0.05$

C. Bivariate Mental Health Seeking Intentions Analysis

In our bivariate analysis using mental health seeking intentions as our primary outcome (Table 4), substance use risk, mental health seeking attitudes, self-stigma of seeking help, trust in physicians, and intrinsic religiosity were associated with mental health seeking intentions at the $p<0.05$ level. Mental health seeking intentions had a positive relationship with substance use risk, trust in physicians, and intrinsic religiosity. Mental health seeking intentions was negatively associated

with mental health seeking attitudes and self-stigma of seeking health. Education and beliefs in mental health were associated with mental health seeking intentions at the $p<0.2$ level.

There was no significant association between mental health seeking intentions and age, gender, nationality, sexual orientation, employment status, annual income, homelessness, residence, incarceration, generalized anxiety, general well-being, PTSD, HIV stigma, depression, organizational religiosity, and non-organizational religiosity in our unadjusted model.

Table 4: Significant Results from Bivariate Linear Regression Analysis of Variables Potentially Associated with Mental Health Seeking Intentions among YB-GBMSM living with HIV in Atlanta, CHIMES dataset (n=100) (See Appendix B for full results)

	COEFFICIENT (B)	**B1 ± SE**	***MODEL BASED MEAN (95% CI)***	***P-VALUE***	***P-VALUE (OVERALL)***
OVERALL	*5.57*	-	*5.57 (5.24 - 5.89)*	-	-
HIGHEST EDUCATION					
HIGH SCHOOL OR LESS	*ref*	*ref*	5.22 (4.78 - 5.66)	*ref*	0.064
SOME COLLEGE OR TECH SCHOOL**	5.22	0.58 ± 0.6	5.81 (5.26 - 6.36)	0.1	
BACHELOR'S DEGREE OR HIGHER*	5.22	- 1 ± 0.47	6.22 (5.40 - 7.04)	0.036	
SUBSTANCE USE RISK*					0.0116
YES	4.51	1.21 ± 0.47	5.72 (5.39 - 6.06)	0.0116	
NO	*ref*	*ref*	4.51 (3.64 - 5.38)	*ref*	
BELIEFS IN MENTAL HEALTH SCALE	5.14	0.25 ± 0.17	5.21 (4.63 - 5.79)	0.14	0.14
MENTAL HEALTH SEEKING ATTITUDES SCALE*	14.66	**-2.37 ± 0.58**	20.29 (13.13 - 27.45)	<0.0001	<0.0001
SELF STIGMA OF SEEKING HELP SCALE*	7.85	**-0.97 ± 0.22**	8.80 (7.32 - 10.29)	<0.0001	<0.0001

TRUST IN PHYSICIAN SCALE*	3.11	**0.62 ± 0.17**	3.50 (2.34 - 4.67)	0.0004	0.0004
DISCRIMINATION IN MEDICAL SETTING SCALE	5.8	-0.15 ± 0.19	5.82 (5.09 - 6.55)	0.44	0.44
DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY*	4.25	0.12 ± 0.048	4.26 (3.16 - 5.37)	0.016	0.016

*Significant when $p<0.05$

**Significant when $p<0.2$

D. Multivariate Mental Health Seeking Intentions Analysis

In our multivariate model using mental health seeking intentions as our outcome (Table 5), we analyzed predictors found significant during bivariate analysis at the 95% and 80% confidence limits. There was a positive association between trust in physicians and mental health seeking intentions. However, at the 95% confidence limit this was approaching significance. At the 95% confidence limit, mental health seeking intentions had a statistically significant negative association with mental health seeking attitudes and self-stigma of seeking help.

At the 95% confidence limit, there was no significant association between mental health seeking intentions and education, substance use risk, belief in mental health, and intrinsic religiosity in our adjusted model.

Table 5: Multivariate Linear Regression Analysis of Variables Associated with Mental Health Seeking Intentions among YB-GBMSM living with HIV in Atlanta, CHIMES dataset (n=100)

	COEFFICIENT (B)	B1 ± SE	*MODEL BASED MEAN (95% CI)*	*P-VALUE*	*P-VALUE (OVERALL)*
OVERALL	*8.54*	-	*9.18 (4.27 - 14.08)*	-	-
HIGHEST EDUCATION					
HIGH SCHOOL OR LESS	*ref*	*ref*	5.2 (4.71 - 5.69)	*ref*	
SOME COLLEGE OR TECH SCHOOL	*8.54*	0.34 ± 0.31	5.52 (4.9 - 6.15)	0.28	0.12
BACHELOR'S DEGREE OR HIGHER	*8.54*	0.81 ± 0.41	6.10 (5.22 - 6.99)	0.47	
SUBSTANCE USE RISK					
YES	*8.54*	0.49 ± 0.43	5.87 (5.49 - 6.25)	0.25	0.25
NO	*ref*	*ref*	5.35 (4.45 - 6.25)	*ref*	
BELIEFS IN MENTAL HEALTH SCALE	*8.54*	0.29 ± 0.15	9.25 (4.35 - 14.15)	0.053	0.54
MENTAL HEALTH SEEKING ATTITUDES SCALE*	***8.54***	**-1.20 ± 0.58**	**12.03 (4.59 - 19.48)**	**0.039**	**0.04**
SELF STIGMA OF SEEKING HELP SCALE*	***8.54***	**-0.62 ± 0.23**	**9.78 (4.82 - 14.74)**	**0.0095**	**0.0095**
TRUST IN PHYSICIAN SCALE	*8.54*	0.34 ± 0.17	2.44 (4.54 - 14.23)	0.051	0.051
DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY	*8.54*	0.054 ± 0.044	9.18 (4.28 - 14.09)	0.23	0.23

*Significant when $p<0.05$

DISCUSSION

YB-GBMSM living with HIV face multiple types of stigma and discrimination. This often manifests in low adherence/linkage to HIV care. This study focuses on understanding how YB-GBMSM's attitudes and intentions towards using mental health care are formed. We hypothesize that 1) discrimination experienced in healthcare settings and 2) poor trust in physicians would adversely affect one's attitudes towards, and intentions of, seeking mental health care.

A. ATTITUDES

In our first analysis of mental health seeking attitudes (MHSA), our bivariate analysis found significant associations between attitudes and physician trust, substance use, religiosity, and self-stigma and seeking help.

We found that physician trust has an interesting relationship with MHSA, where trust in physicians decreases when MHSA increases. This is interesting because we would expect mental health care uptake and attitudes to be more favorable when there is more trust in physicians because there is less provider bias. However, in our multivariate analysis physician trust was not significantly associated with health seeking behavior. Subsequently, discrimination experienced in medical settings was not further analyzed as a predictor, as it was not significantly associated with attitudes towards seeking mental health care during bivariate analysis. This could be a topic for further analysis in the future.

Our bivariate analysis also revealed that risk of substance use and organizational/intrinsic religiosity were significant predictors of attitudes towards seeking mental health care. Substance use and religiosity were negatively associated with MHSA. However, contrary to our finding, a

study among recovering alcoholics found that those involved with substance use were more likely to use mental health services.[103]

In our bivariate analysis, the negative association between MHSA and organizational/intrinsic religiosity suggests that experiences with religion predict poor MHSA. This is in accordance with previous studies among black American populations analyzing mental health seeking profiles and the influence of religion.[104] [105] None of these associations were significant during our multivariate analysis.

Interestingly, we found a positive association between self-stigma of seeking help and MHSA during bivariate and multivariate analyses. Meaning, as more self-stigma of seeking help is experienced, MHSA becomes more favorable which, contradicts the literature. Previous literature shows that normative behaviors and social stigma produce less favorable attitudes towards seeking help.[106] Acclimation to US culture proves to decrease the amount of self-perceived stigma off seeking help among men and women of African descent.[107] Thus, we would expect to see a direct relationship between self-stigma and MHSA. Hence, we would have expected to see a MHSA become more favorable when the self-stigma of seeking help decreases. This is well documented in the literature among similar populations.[108] [109] [110] [111]

We also observed a surprising negative association between mental health seeking attitudes and mental health seeking intentions. As mental health seeking attitudes increases, mental health seeking intentions decreases. However, the TPB suggests that attitudes precede intentions, which would assume attitudes and intentions trend similarly (Figure 1). We would, thus, expect mental

health seeking attitudes and mental health seeking intentions to be a positively associated. Our contrary finding seems to be unique the bivariate analysis.

B. Intentions

In our second analysis, we analyzed the predictors of mental health seeking intentions (MHSI). In the bivariate analysis, MHSI was significantly associated with physician trust, education, substance use, mental health beliefs, self-stigma of seeking help, and intrinsic religiosity.

MHSI became more favorable as trust in physicians increased. Our findings agree with previous studies that have shown that poor physician trust decreases intentions to seek mental health and general care.[112] [113] [114] Physician trust has also proven important to adherence to treatment.[115] However, this was only significant at the bivariate level of analysis and trending towards significance during multivariate analysis. Medical discrimination did not have a significant relationship with MHSI during bivariate analysis and was not included as a predictor in the multivariate analysis.

Education was significantly associated with MHSI. This relationship is validated by a previous study among young people in Ghana.[116] Education has also been proven to increase mental health literacy which impacts MHSI.[117] [118] Mental health literacy is important as it shows improved MHSI in other studies.[119] [120]

Beliefs in mental health, substance use, and intrinsic religiosity were significantly positively associated with MHSI during the bivariate analysis. As beliefs in mental health strengthened, MHSI became more favorable, which is in accordance with the Theory of Planned Behavior (TPB). The TPB states that a behavioral intention relies upon one's belief in the behavior. Thus,

better mental health beliefs predict better MHSI. Interestingly as risk of substance use increased, MHSI also became more favorable. Higher levels of religiosity also indicated better MHSI, which is confirmed by previous studies among similar populations.[121] [122] Yet higher levels of religiosity reduces MHSA.

Self-stigma of seeking help and MHSA were negatively associated with MHSI. As more self-stigma is experienced, MHSI becomes less favorable. This is in support of previous studies among black Americans and young people, which found self-stigma adversely effected MHSI.[123] [124] [125] Interestingly, MHSI still becomes less favorable as MHSA becomes more favorable.

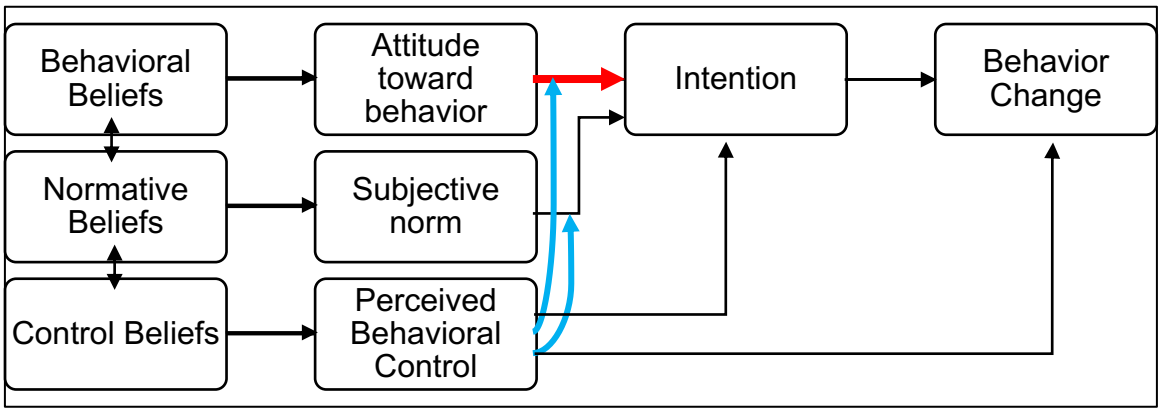
C. Attitudes vs. Intentions

Our study was unable to find significant associations between discrimination experienced in medical settings, trust in physicians, MHSA, and MHSI.

Our most interesting findings originate from the observed associations with MHSA, MHSI, self-stigma of seeking help, and religiosity. Firstly, MHSA and MHSI have a negative association which means as one increases, the other decreases. This contradicts the Theory of Planned Behavior (TPB), which states attitudes predict intentions which would suggest they have a positive association. Previous studies confirm this direct relationship where attitudes predict intentions to seek mental health care.[126] [127] Secondly, self-stigma of seeking help was favorably associated with MHSA, which contradicts previous findings. This relationship flips with MHSI. Meaning self-stigma seems to encourage attitudes but not intentions. Lastly, we see a similar relationship with religiosity. Where religiosity favorably effects MHSI but not MHSA. It could also explain the self-stigma and religiosity observations.

We hypothesize that the temporal relationship between attitudes and intentions in the TBP could account for these interesting associations. Self-stigma and religiosity could affect attitudes in one way and intentions in another because attitudes precede intentions. Meaning, attitudes and intentions occur one after the other making it feasible that associations would differ between the two. We see the temporal relationship between attitudes and intentions in Figure 3. We suggest that events occur between attitudes and intentions (red arrow on Figure 3) which may affect intentions but not attitudes. This is plausible because we see subjective norms and perceived behavioral control can influence the relationship between attitudes and intentions (blue arrows on Figure 3).

Figure 3: Diagram of the Theory of Planned Behavior's Stages showing Temporal relationship



From our study, we see that as self-stigma of seeking help predicts a positive change in MHSA but a negative change in MHSI. From the literature, we would expect self-stigma to decrease both MHSA and MHSI. We offer that among our population, self-stigma may not impact one's attitudes towards mental health care but more closely effect one's intention to seek mental health care. This

is feasible because attitudes precede intentions according to TPB and may not predict one another, which is observed in our findings.

Similarly, religiosity has adverse effect on MHSA but a favorable impact on MHSI. While the temporal relationship argument between MHSA and MHSI still holds, this observed relationship is more plausible. The literature, as stated above, shows that religiosity has been proven to both discourage some individuals from seeking help and encouraging other individuals from seeking help.[128] Thus, seeing a positive relationship in MHSI and negative relationship between MHSA is justifiable. However, the flipped relationship is still interesting as we acknowledge attitudes may not predict intentions among our population.

STRENGTHS AND LIMITATIONS

While our study could not comment conclusively on the relationship between medical discrimination, physician trust and mental health seeking attitudes and intentions, we provide an exploration of mental health seeking behaviors among YB-GBMSM living with HIV. While MHSA, MHSI, and their respective predictors has been studied among various populations, there is less known about it in the context of YB-GBMSM living with HIV. Thus, our study contributes meaningfully to the literature on black, sexual minority groups living with HIV.

Our limitations are due to participant eligibility criteria, sample size, and sampling design. First, we collected data from a cohort who were specifically young, black, gay or bisexual men who have sex with men and who are living with HIV. While these restrictions control for age, race, sexual orientation, and HIV status, our sample could have been too homogenous to detect any true effect of medical discrimination and trust on MHSA and MHSI. Secondly, our data comes from 100 individuals. While this sample size allows for analysis, it may be too small to detect true or

wide-spread differences. Lastly, our participants were recruited from only two specific Ryan White clinics. This restricts the generalizability of our study.

IMPLICATIONS

Rampant racial, sexuality, and HIV stigma and discrimination subjugate YB-GBMSM and those living with HIV, which puts them at high risk of poor mental health. YB-GBMSM who are also living with HIV, experiences even higher risk as their multiple burdened identities intersect with HIV stigma. Thus, effective mental health programming needs to inculcate YB-GBMSM. Furthermore, we need to understand why there is low uptake of existing mental health infrastructures among this population. To understand this, we need to look at predictors for mental health seeking behaviors which this study does. This study shows the importance of addressing religion and self-stigma of seeking help in planning mental health interventions.

As we seek to serve vulnerable populations, we need to continue looking at how current medical systems act as a barrier to care. To this end, our study provides a good template for analyzing medical infrastructure effects on health seeking behaviors in conjunction with associated societal norms, beliefs, and behaviors. Future studies should further investigate how medical discrimination and poor physician trust effects mental health seeking behaviors among YB-GBMSM individuals living with HIV. Future studies should also compare different racial, sexual, and HIV status populations to further investigate how medical discrimination effects health seeking behaviors among YB-GBMSM living with HIV populations. It would also be interesting to compare rural and urban YB-GBMSM populations.

CONCLUSION

This study analyzes the predictors of attitudes and intentions towards seeking mental health care among YB-GBMSM living with HIV. We hypothesized discrimination experienced in medical settings and poor trust in physicians would predict attitudes and intentions towards seeking mental health care. However, our study found that discrimination in medical settings and poor physician trust did not significantly affect attitude and intentions towards mental health care. Our findings suggest self-stigma and religion influence mental health seeking attitudes and intentions. This study's findings uniquely describe a nuanced population, YB-GBMSM living with HIV in Metro Atlanta. Future mental health programming should target self-stigma and incorporate religion for YB-GBMSM living with HIV. Improving mental health has proven to strengthen HIV adherence and linkage and should be prioritized.

APPENDICES

APPENDIX A

Table 6: Bivariate Linear Regression Analysis of Variables Potentially Associated with Mental Health Seeking Attitudes among black MSM living with HIV in Atlanta, CHIMES dataset (n=100)

	COEFFICIENT (B)	**B1 ± SE**	*MODEL BASED MEAN (95% CI)*	*P-VALUE*	*P-VALUE (OVERALL)*
OVERALL	*3.83*	-	*3.83 (3.78 - 3.88)*	-	-
AGE (IN YEARS)					
18-25	3.81	0.036 ± 0.052	3.85 (3.78 - 3.92)	0.5	0.5
26-30	*ref*	*ref*	3.81 (3.74 - 3.89)	*ref*	
GENDER					
MAN	4	-0.17 ± 0.26	3.83 (3.78 - 3.88)	0.52	0.52
OTHER	*ref*	*ref*	4.0 (3.48 - 4.52)	*ref*	
COUNTRY OF BIRTH					
USA	3.72	0.11 ± 0.19	3.83 (3.78 - 3.89)	0.55	0.55
OTHER	*ref*	*ref*	3.72 (3.35 - 4.092)	*ref*	
SEXUAL IDENTITY					
GAY/ HOMOSEXUAL/ SAME GENDER LOVING (SGL)	3.8	0.044 ± 0.063	3.84 (3.78 - 3.90)	0.49	0.49
STRAIGHT/ HETEROSEXUAL	*ref*	*ref*	3.8 (3.69 - 3.91)	*ref*	
CURRENTLY ENROLLED IN SCHOOL					
YES	3.83	-0.0015 ± 0.061	3.83 (3.73 - 3.94)	0.98	0.98
NO	*ref*	*ref*	3.83 (3.78 - 3.89)	*ref*	
HIGHEST EDUCATION					
HIGH SCHOOL OR LESS	*ref*	*ref*	3.85 (3.78 - 3.92)	*ref*	
SOME COLLEGE OR TECH SCHOOL	3.85	-0.0087 ± 0.058	3.84 (3.75 - 3.93)	0.88	0.4
BACHELOR'S DEGREE OR HIGHER**	**3.85**	**-0.01 ± 0.077**	3.75 (3.61 - 3.88)	**0.19**	
EMPLOYMENT STATUS					

FULL TIME EMPLOYED**	**3.8**	**0.085 ± 0.058**	**3.89 (3.81 - 3.97)**	**0.15**	
PART TIME EMPLOYED	3.8	-0.021 ± 0.071	3.78 (3.67 - 3.9)	0.77	0.23
UNEMPLOYED	*ref*	*ref*	3.80 (3.72 -3.88)	*ref*	
ANNUAL INCOME					
LESS THAN $10,000	*ref*	*ref*	3.83 (3.75 - 3.92)	*ref*	
$10,000 - $19,999	3.83	-0.064 ± 0.078	3.77 (3.64 - 3.90)	0.42	
$20,000 - $29,999	3.83	0.021 ± 0.073	3.86 (3.74 - 3.97)	0.77	0.77
$30,000 OR MORE	3.83	0.014 ± 0.068	3.83 (3.75 - 3.92)	0.84	
HOMELESSNESS IN PAST 3 MONTHS					
YES	3.84	-0.064 ± 0.073	3.78 (3.64 - 3.91)	0.38	0.38
NO	*ref*	*ref*	3.84 (3.79 - 3.9).	*ref*	
RESIDENCE					
OWN HOME	*ref*	*ref*	3.88 (3.73 - 4.026)	*ref*	
RENTAL	3.88	-0.05 ± 0.085	3.83 (3.74 - 3.91)	0.56	
PARENTS HOME	3.88	-0.047 ± 0.096	3.83 (3.71 - 3.96)	0.63	0.9
OTHER	3.88	-0.068 ± 0.088	3.81 (3.71 - 3.91)	0.44	
NO. MOVES IN PAST 6 MONTHS					
NEVER	*ref*	*ref*	3.83 (3.75 - 3.90)	*ref*	
ONCE	3.83	-0.0038 ± 0.066	3.82 (3.72 - 3.93)	0.95	
TWICE	3.83	0.021 ± 0.08	3.85 (3.71 - 3.99)	0.79	0.99
MORE THAN TWICE	3.83	0.021 ± 0.088	3.85 (3.7 - 4.01)	0.82	
EVER BEEN INCARCERATED:					
NEVER	*ref*	*ref*	3.86 (3.78 - 3.93)	*ref*	
INCARCERATED (NOT IN THE PAST SIX MONTHS)	3.86	-0.047 ± 0.057	3.81 (3.73 - 3.9)	0.41	0.57
INCARCERATED (IN THE PAST SIX MONTHS)	3.86	-0.073 ± 0.082	3.79 (3.64 - 3.93)	0.37	

GENERALIZED ANXIETY DISORDER 7-ITEM (GAD-7) SCALE					
NO SYMPTOMS OF ANXIETY	*ref*	*ref*	3.83 (3.76 - 3.91)	*ref*	
MILD ANXIETY	3.83	-0.038 ± 0.072	3.8 (3.67 - 3.92)	0.6	0.89
MODERATE ANXIETY	3.83	-0.037 ± 0.082	3.87 (3.73 - 4.018)	0.65	
SEVERE ANXIETY	3.83	-0.001 ± 0.079	3.83 (3.69 - 3.97)	0.99	
GENERAL WELLBEING SCALE					
POSITIVE WELL-BEING	*ref*	*ref*	3.79 (3.66 - 3.93)	*ref*	
MARGINAL/LOW POSITIVE	3.79	0.088 ± 0.1	3.88 (3.74 - 4.025)	0.38	0.67
STRESS PROBLEM	3.79	0.012 ± 0.081	3.81 (3.72 - 3.89)	0.88	
SEVERE/SERIOUS/DISTRESS	3.79	0.068 ± 0.081	3.86 (3.77 - 3.95)	0.41	
SUBSTANCE USE RISK**					
YES	**3.94**	**-0.12 ± 0.077**	**3.82 (3.76 - 3.87)**	**0.112**	0.112
NO	*ref*	*ref*	3.94 (3.8 - 4.083)	*ref*	
TRAUMA RELATED SYMPTOMS (PTSD CHECKLIST-CIVILIAN VERSION)					
YES	3.84	-0.0094 ± 0.053	3.83 (3.75 - 3.91)	0.86	0.86
NO	*ref*	*ref*	3.84 (3.77 - 3.91)	*ref*	
BELIEFS IN MENTAL HEALTH SCALE	3.86	-0.016 ± 0.028	3.86 (3.75 - 3.97)	0.57	0.57
MENTAL HEALTH SEEKING INTENTIONS SCALE*	**4.17**	**-0.061 ± 0.015**	**4.18 (1.003 - 4.35)**	**<0.0001**	**<0.00001**
SELF STIGMA OF SEEKING HELP SCALE*	**3.57**	**0.11 ± 0.27**	**3.58 (3.41 - 3.75)**	**0.0033**	**0.0033**
TRUST IN PHYSICIAN SCALE*	**4.06**	**-0.058 ± 0.29**	**4.063 (3.83 - 4.3)**	**0.047**	**0.047**

DISCRIMINATION IN MEDICAL SETTING SCALE	3.82	0.008 ± 0.031	3.82 (3.71 - 3.93)	0.798	0.798
HIV STIGMA SCALE	3.9	-0.027 ± 0.033	3.9 (3.73 - 4.06)	0.41	0.41
DEPRESSION SCALE	3.84	-0.00085 ± 0.002	3.84 (3.76 - 3.92)	0.7	0.7
DUKE UNIVERSITY RELIGION INDEX-ORGANIZATIONAL RELIGIOUS ACTIVITY*	3.94	-0.046 ± 0.02	3.94 (3.84 - 4.05)	0.021	0.021
DUKE UNIVERSITY RELIGION INDEX - NON ORGANIZATIONAL RELIGIOUS ACTIVITY	3.87	-0.017 ± 0.16	3.87 (3.78 - 3.96)	0.31	0.31
DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY*	4.05	-0.019 ± 0.0077	4.05 (3.87 - 4.23)	0.013	0.013

*Significant when p<0.05

**Significant when p<0.2

APPENDIX B:

Table 7: Bivariate Linear Regression Analysis of Variables Potentially Associated with Mental Health Seeking Intentions among black MSM living with HIV in Atlanta, CHIMES dataset (n=100)

	COEFFICIENT (B)	**B1 ± SE**	***MODEL BASED MEAN (95% CI)***	***P-VALUE***	***P-VALUE (OVERALL)***
OVERALL	*5.57*	-	*5.57 (5.24 - 5.89)*	-	-
AGE (IN YEARS)					
18-25	5.44	0.044 ± 0.33	5.59 (5.13 - 6.04)	0.89	0.89
26-30	*ref*	*ref*	5.54 (5.08 - 6.01)	*ref*	
GENDER					
MAN	7	-1.45 ± 1.64	5.55 (5.23 - 5.88)	0.38	0.38
OTHER	*ref*	*ref*	7.0 (3.77 - 10.23)	*ref*	
COUNTRY OF BIRTH					
USA	5.5	0.074 ± 1.17	5.57 (5.24 - 5.91)	0.95	0.95

OTHER	*ref*	*ref*	5.50 (3.19 - 7.81)	*ref*	
SEXUAL IDENTITY					
GAY/ HOMOSEXUAL/ SAME GENDER LOVING (SGL)	5.53	0.047 ± 0.39	5.58 (5.21 - 5.94)	0.49	0.49
STRAIGHT/ HETEROSEXUAL	*ref*	*ref*	5.53 (4.84 - 6.22)	*ref*	
CURRENTLY ENROLLED IN SCHOOL					
YES	5.6	-0.15 ± 0.38	5.45 (4.80 - 6.10)	0.69	0.69
NO	*ref*	*ref*	5.60 (5.23 - 5.98)	*ref*	
HIGHEST EDUCATION					
HIGH SCHOOL OR LESS	*ref*	*ref*	5.22 (4.78 - 5.66)	*ref*	
SOME COLLEGE OR TECH SCHOOL**	5.22	0.58 ± 0.6	5.81 (5.26 - 6.36)	0.1	0.064
BACHELOR'S DEGREE OR HIGHER*	5.22	- 1 ± 0.47	6.22 (5.40 - 7.04)	0.036	
EMPLOYMENT STATUS					
FULL TIME EMPLOYED**	5.54	-0.15 ± 0.37	5.39 (4.87 - 5.92)	0.69	
PART TIME EMPLOYED	5.54	0.41 ± 0.44	5.95 (5.23 - 6.67)	0.36	0.67
UNEMPLOYED	*ref*	*ref*	5.54 (5.04 - 6.04)	*ref*	
ANNUAL INCOME					
LESS THAN $10,000	*ref*	*ref*	5.38 (4.85 - 6.48)	*ref*	
$10,000 - $19,999	5.38	0.29 ± 0.49	5.67 (4.85 - 6.48)	0.55	0.72
$20,000 - $29,999	5.38	0.51 ± 0.45	5.88 (5.15 - 6.61)	0.26	
$30,000 OR MORE	5.38	0.17 ± 0.42	5.55 (4.89 - 6.20)	0.69	
HOMELESSNESS IN PAST 3 MONTHS					
YES	5.55	0.092 ± 0.46	5.64 (4.81 - 6.48)	0.84	0.84
NO	*ref*	*ref*	5.55 (5.20 - 5.91).	*ref*	
RESIDENCE					
OWN HOME	*ref*	*ref*	5.18 (4.28 - 6.08)	*ref*	
RENTAL	3.88	-0.05 ± 0.085	5.75 (5.24 - 6.26)	0.28	0.6
PARENTS HOME	3.88	-0.047 ± 0.096	5.74 (4.97 - 6.51)	0.35	
OTHER	3.88	-0.068 ± 0.088	5.38 (4.28 - 6.08)	0.72	

NO. MOVES IN PAST 6 MONTHS					
NEVER	*ref*	*ref*	5.54 (5.08 - 5.99)	*ref*	0.97
ONCE	5.54	0.13 ± 0.41	5.67 (5.0 - 6.34)	0.75	
TWICE	5.54	0.11 ± 0.5	5.64 (5.77 - 6.52)	0.83	
MORE THAN TWICE	5.54	-0.14 ± 0.55	5.39 (4.41 - 6.38)	0.8	
EVER BEEN INCARCERATED:					
NEVER	*ref*	*ref*	5.62 (5.15 - 6.08)	*ref*	0.84
INCARCERATED (NOT IN THE PAST SIX MONTHS)	5.62	-0.17 ± 0.35	5.44 (4.92 - 5.98)	0.63	
INCARCERATED (IN THE PAST SIX MONTHS)	5.62	0.099 ± 0.51	5.72 (4.81 - 6.62)	0.85	
GENERALIZED ANXIETY DISORDER 7-ITEM (GAD-7) SCALE					
NO SYMPTOMS OF ANXIETY	*ref*	*ref*	5.49 (5.01 - 5.96)	*ref*	0.52
MILD ANXIETY	5.49	0.46 ± 0.46	5.94 (5.17 - 6.72)	0.32	
MODERATE ANXIETY	5.49	0.15 ± 0.52	5.64 (4.73 - 6.55)	0.76	
SEVERE ANXIETY	5.49	-0.22 ± 0.5	5.26 (4.39 - 6.14)	0.66	
GENERAL WELLBEING SCALE					
POSITIVE WELL-BEING	*ref*	*ref*	5.97 (5.07 - 6.88)	*ref*	0.87
MARGINAL/LOW POSITIVE	5.97	-0.21 ± 0.64	5.77 (4.87 - 6.67)	0.75	
STRESS PROBLEM	5.97	-0.32 ± 0.53	5.67 (5.12 - 6.19)	0.55	
SEVERE/SERIOUS/DISTRESS**	5.97	-0.75 ± 0.53	5.23 (4.68 - 5.78)	0.16	
SUBSTANCE USE RISK*					
YES	4.51	1.21 ± 0.47	5.72 (5.39 - 6.06)	0.0116	0.0116
NO	*ref*	*ref*	4.51 (3.64 - 5.38)	*ref*	
TRAUMA RELATED SYMPTOMS (PTSD CHECKLIST-CIVILIAN VERSION)					
YES	5.61	-0.097 ± 0.33	5.51 (5.02 - 6.01)	0.77	0.77
NO	*ref*	*ref*	5.61 (5.18 - 6.04)	*ref*	

BELIEFS IN MENTAL HEALTH SCALE	5.14	0.25 ± 0.17	5.21 (4.63 - 5.79)	0.14	0.14
MENTAL HEALTH SEEKING ATTITUDES SCALE*	14.66	**-2.37 ± 0.58**	20.29 (13.13 - 27.45)	<0.0001	<0.0001
SELF STIGMA OF SEEKING HELP SCALE*	7.85	**-0.97 ± 0.22**	8.80 (7.32 - 10.29)	<0.0001	<0.0001
TRUST IN PHYSICIAN SCALE*	3.11	**0.62 ± 0.17**	3.50 (2.34 - 4.67)	0.0004	0.0004
DISCRIMINATION IN MEDICAL SETTING SCALE	5.8	-0.15 ± 0.19	5.82 (5.09 - 6.55)	0.44	0.44
HIV STIGMA SCALE	5.62	-0.24 ± 0.2	5.62 (4.61 - 6.63)	0.91	0.91
DEPRESSION SCALE	5.63	-0.0072 ± 0.014	5.63 (5.14 - 6.13)	0.6	0.6
DUKE UNIVERSITY RELIGION INDEX-ORGANIZATIONAL RELIGIOUS ACTIVITY	5.21	0.16 ± 0.13	5.23 (4.61 - 5.56)	0.22	0.22
DUKE UNIVERSITY RELIGION INDEX - NON ORGANIZATIONAL RELIGIOUS ACTIVITY	5.47	0.04 ± 0.1	5.48 (4.92 - 6.03)	0.69	0.69
DUKE UNIVERSITY RELIGION INDEX - INTRINSIC RELIGIOUSITY*	4.25	0.12 ± 0.048	4.26 (3.16 - 5.37)	0.016	0.016

*Significant when $p<0.05$

**Significant when $p<0.2$

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