A MIXED METHODS EXAMINATION OF DEPRESSIVE SYMPTOMATOLOGY AND USUAL SOURCES OF CARE AMONG BLACK MEN

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ABSTRACT

Leslie Bernice Adams: A Mixed Methods Examination of Depressive Symptomatology and Usual Sources of Care Among Black Men
(Under the direction of Alexandra Lightfoot)

Background: Black men report having a usual source of care (USOC) less frequently than non-Black men and women. Yet, few studies examine the role of depressive symptoms and psychosocial factors and its relationship to USOC reporting in this population. Thus, the goal of this dissertation study to investigate the direct and moderated associations between Black men's depressive symptom factors and USOC reporting.

Methods: Data from Manuscripts 1 and 2 were drawn from a cross-sectional, community-based sample of Black men (n=683) from the African American Men's Health and Social Life Study. Manuscript 1 assesses the dimensional structure of the Center for Epidemiological Studies Depression (CES-D) 12-item scale using exploratory and confirmatory factor analysis. Manuscript 2 builds on these findings to assess the association between the confirmed CES-D factor structure and USOC status using a latent moderated structural equation modeling approach. This study tests the direct depression factor-USOC status relationship and assesses race and gender-related moderators (John Henryism, Masculine role norms salience, Restrictive Emotionality, and Racial Centrality). Finally, Manuscript 3 uses concept mapping data collected from Black men and stakeholders (n=36) to determine how depressive symptoms are conceptualized and connected to Black men's USOC use.

Results: In Manuscript 1, two latent factors emerged from CES-D scale: interpersonal negative affect (INA) and diminished positive affect (DPA). In Manuscript 2, the INA factor was negatively associated with USOC reporting ($\beta = -0.770$, $p<0.01$). In contrast, the DPA factor was not significantly associated with USOC reporting ($\beta = 0.693$, $p=0.096$). Interactive effects from the latent moderated analyses showed no significant psychosocial moderators. Finally, in Manuscript 3, participants identified 68 unique characteristics of depression reflected across five conceptual domains: (1) physical states, (2) emotional states, (3) diminished drive, (4) internal conflicts, and (5) communication with others. Of these, the physical states cluster was most commonly associated with USOC use, followed by diminished drive.

Conclusions : Findings from this study will inform efforts to improve existing mental health care delivery models for Black men. Additionally, results reflect the diverse range of symptomatology that reflect gendered aspects of the depression experience.

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LIST OF ABBREVIATIONS

ACA	Affordable Care Act
AAMHSL	African American Men's Health and Social Life Study
CAB	Community Advisory Board
CES-D	Center for Epidemiological Studies Depression Scale
CFA	Confirmatory Factory Analysis
EFA	Exploratory Factor Analysis
MIBI	Multidimensional Inventory of Black Identity
SEM	Structural Equation Model
TMSC	Transactional Model of Stress and Coping
USOC	Usual Source of Care

CHAPTER 1: INTRODUCTION

Problem Statement

A central mission of the Affordable Care Act (ACA) and previous health reform efforts was to create equitable and accessible health care services. The provision and receipt of preventive health services (e.g. immunizations, screenings, routine checkups, etc.) aligns with the ACA's core mission to increase opportunities to reduce premature mortality and mitigate chronic disease and disability. Although the national debates on health care reform currently focus on the potential impact of repeal of the ACA on our nation's most vulnerable populations (e.g. low-income, women, veterans, etc.), scarce attention has been paid to some groups with the greatest health care access disadvantages. For example, Black men have some of our nation's highest rates of premature mortality due to preventable chronic disease (J. Xu, Kochanek, Murphy, & Tejada-Vera, 2016). These disparities are often linked to diminished use of preventive health services, such as timely preventive screening and routine health examinations (Blewett, Johnson, Lee, & Scal, 2008; Cherry, Woodwell, & Rechtsteiner, 2007; W. P. Hammond, Matthews, & Corbie-Smith, 2010; W. P. Hammond, Matthews, Mohottige, Agyemang, & Corbie-Smith, 2010a). Scholars posit that missed opportunities for preventive health services often occur because Black men lack a usual source of care in the health system.

A usual source of care (USOC), defined as a regular place or provider to receive regular medical care, serves as the primary facilitator to preventive health services and increases continuity of care among diverse patient populations (Blewett et al., 2008; Jennifer E DeVoe, George E Fryer, Robert Phillips, & Larry Green, 2003; Sox, Swartz, Burstin, & Brennan, 1998).

Almost 90% of Americans report access to a regular place or provider for medical care (Ward BW, 2016). Yet, there are notable disparities in USOC access that are patterned across racial and gender lines. Recent data indicates that USOC reporting among non-Hispanic Blacks is below the national average, with only 81% reporting a USOC compared to the national average of 88.1% (Artiga, 2016; Ward BW, 2016). Men are also less likely to report a usual source of care than women (Ward BW, 2016; Weissman, Stern, Fielding, & Epstein, 1991).

Rates of usual source of care reporting diverge even more for Black men, who report having a USOC at significantly lower rates than their white male counterparts (Jennifer E DeVoe et al., 2003; Gaskin et al., 2007; Ward BW, 2016). Current investigations of USOC disparities cite socioeconomic barriers to health care access, highlighting the critical role of proximity to care, insurance status, and other economically-driven factors (Jennifer E DeVoe et al., 2003; DeVoe, Tillotson, Lesko, Wallace, & Angier, 2011; J. Xu et al., 2016). However, a report from the Kaiser Family Foundation (2016) suggests that some USOC disparities are determined by non-economic factors. Their study found that 27% of Black adults delayed needed care for reasons other than cost, compared to just 19% of White adults. Consequently, emerging research focuses on the combined influence of social and psychological stimuli, known as psychosocial factors, in driving persistent disparities in health care access and utilization (Babitsch, Gohl, & von Lengerke, 2012; von Lengerke, Gohl, & Babitsch, 2014).

Depressive Symptomatology and USOC Acquisition

While previous investigations focus almost exclusively on physical health factors related to health care access disparities, the role played by factors associated with mental health status receive limited attention (W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011; Leaf et al., 1985; Li, Dick, Fiscella, Conwell, & Friedman, 2011). This lack of attention is particularly concerning since early mental health services studies that poorer mental health status was associated with in increased use of health services (Bucholz & Robins, 1987; Leaf et al., 1985). However, emerging research linking mental health status to indicators of health access are somewhat mixed. For example, a more recent study by Hibbard and colleagues (2007) found that depressive symptoms predicted diminished patient activation towards a variety of self-managed health behaviors, including establishing regular contact with a USOC. Such findings suggest that depressive symptoms influence the decisional pathway to USOC acquisition via breakdowns in the motivational processes related to health care utilization (Hibbard et al., 2007; Leaf et al., 1985; J. M. Thorpe, Thorpe, Kennelty, & Chewning, 2012). Despite the preceding evidence linking depressive symptoms and USOC acquisition, few studies assessing this association focus on Black men. One study by Hammond and colleagues (2011) specifically evaluated determinants of USOC for Black men and found that poor mental health status was associated with lower odds of reporting a USOC. However, the psychosocial mechanisms driving associations between depressive symptomatology and USOC among Black men remain unexplored. This dissertation addresses this gap by exploring the interactive effect of gender and race-related factors, and depressive symptomatology in Black men's USOC acquisition.

Depressive Symptomatology among Black Men

Major depressive disorder is the most common mental health disorder in the United States, impacting close to 17 million Americans (American Psychological Association, 2009; R. C. Kessler et al., 2005; E. Ward & Mengesha, 2013). Despite the high prevalence of major depressive disorder in the general population, presentation of symptoms has been shown to vary among patient populations. This mental health condition, characterized by persistent feelings of sadness, despair, and inability to engage in normal activities, ranges in severity and chronicity and has emerged as a major global contributor to disability and disease (Organization, 1996).

However, many individuals experience depressive symptoms that are disruptive but do not meet clinical or diagnostic criteria for major depressive disorder. One nationally representative survey found close to 20% of respondents reported depressive symptoms, the majority of which were mild or moderate in severity (Shim, Baltrus, Ye, & Rust, 2011).

Black men experience prolonged severity and chronicity associated with depressive symptoms in comparison to their White counterparts, which may reduce perceived need to establish linkages to the health care system like a USOC (Ault-Brutus, 2012; Corbie-Smith, Flagg, Doyle, & O'Brien, 2002; Williams, 2003). USOC inequities among Black men may be further exacerbated by strongly held gendered perceptions that associate depressive symptomatology with weakness and vulnerability and discourage help-seeking behavior (W. P. Hammond, Matthews, Mohottige, Agyemang, & Corbie-Smith, 2010b; W. P. Hammond et al., 2011). In fact, previous research affirms that male USOC rates and other health care utilization disparities may be attributable to gender role socialization, or the process by which one learns differential social expectations associated with gender that encourage men and boys to value displaying strength and resolve in the face of depressive symptomology (W. P. Hammond, Matthews, et al., 2010a; W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011; Thomas, Hammond, & Kohn-Wood, 2014).

Most extant research presumes that depressive symptoms present uniformly across or within groups of individuals. However, emerging quantitative literature finds significant heterogeneity in depressive symptoms, particularly among racial and ethnic minorities (Kim, Decoster, Huang, & Chiriboga, 2011). The Center for Epidemiological Studies Depression Scale (CES-D) is one of the most widely-used population-based measures of depressive symptoms. The psychometric properties of the CES-D have been assessed through exploratory and confirmatory factor analysis and results confirm the presence of four underlying or latent factors: depressed affect, positive affect, somatic symptoms, and interpersonal conflict (Radloff, 1977). Although the CES-D factor structure has been validated among Black adults, few studies focus exclusively on Black men, who experience depressive symptomatology in markedly different ways, such as increased somatic complaints with non-physical etiology,(Kim, Chiriboga, & Jang, 2009; Nguyen, Kitner-Triolo, Evans, & Zonderman, 2004; Perreira, Deeb-Sossa, Harris, & Bollen, 2005). Further investigation of the CES-D factor structure in a community-driven sample of Black men would verify its underlying latent factors and determine whether or how they impact their USOC acquisition. Moreover, utilizing complementary, participatory methods, which elicit direct input from Black men, could clarify how depressive symptoms manifest and their perceived impact on Black men's decisions to secure a usual source of care.

Race and Gender-Related Psychosocial Determinants of USOC Access

Black men's experiences of depressive symptomatology are further shaped by a broader range of race and gender-related psychosocial factors that also impact patterns of USOC reporting (Clark, Anderson, Clark, & Williams, 1999; Griffith, Ober Allen, & Gunter, 2011; Hawkins et al., 2017). Specifically, scholars identify masculinity norms as integral components of men's attitudes towards health care use (Addis & Mahalik, 2003; Courtenay, 2000; W. P. Hammond, Matthews, et al., 2010b; Mahalik, Burns, & Syzdek, 2007). Masculinity norms, defined as a set of beliefs, attitudes, or behaviors about what it means to be a man, are multidimensional and influenced by both social (e.g. peer and family networks) as well as cultural (e.g. race or national origin) factors (Levant, Hirsch, Celentano, & Cozza, 1992; Levant et al., 2007). Yet, masculinity norms are but one aspect of the self that influence Black men's attitudes toward health care access and use. In fact, researchers determined that Black men's masculinity norms are shaped and influenced by their racial identity (Hammond & Mattis, 2005) or group membership based on one's perception of shared common heritage with a particular racial category (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). Importantly, researchers have also found that racial identity protects the mental health of Black Americans (Banks & Kohn-Wood, 2007; Sellers, Copeland-Linder, Martin, & Lewis, 2006) and this aspect of the self has been shown to work synergistically with masculinity norms to influence Black men's health care system engagement Hawkins et al., 2017; Powell, Adams, Cole-Lewis, Agyemang, & Upton, 2016. Scholars posit that these identities are particularly salient in the presence of stressors, such as depressive symptomatology, and operate differentially in social contexts (W. P. Hammond, 2012; Matthews, Hammond, Nuru-Jeter, Cole-Lewis, & Melvin, 2013; Shelton & Sellers, 2000). Thus, it is plausible that masculinity norms and racial identity work similarly in concert to effect associations between depressive symptomatology and USOC among Black men. This dissertation utilizes a mixed-methods approach to explore this possibility.

Expanding Health Care Utilization Models to Address USOC Disparities in Black Men

Many research studies assessing USOC disparities are theoretically grounded by Andersen's Behavioral Model of Health and answer the fundamental question: "What factors influence individual patterns in health care use?"(Andersen, 1995). This model has been widely applied to research with diverse populations to explicate patterns of health services use (Babitsch et al., 2012). In this model, USOC acquisition is typically positioned as an enabling determinant of health care utilization, but rarely evaluated as a key health care services outcome. Furthermore, psychosocial factors related to health care use, particularly those that are identity related, have been scarcely explored to explain disparate rates of USOC acquisition among Black men (Bradley et al., 2002; W. P. Hammond, Matthews, & Corbie-Smith, 2010; W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011).

Expansion of the Andersen model to include psychosocial determinants and focus on health care access factors like USOC as an outcome, may advance the field's understanding of unique access barriers for vulnerable patient populations (e.g., Black men). In this dissertation, I build on and expand the Andersen model to address the following study aims:

Study Aims

1. To assess the factor structure of the CES-D in a community sample of Black men.
2. To investigate direct and moderating associations between CES-D factors and Black men's USOC procurement.
3. To use participatory concept mapping methods to conceptualize depressive symptomatology and its connection to USOC access among Black men.

Aims 1-2 will be addressed with data from the African American Men's Health and Social Life Study (AAMHSL, 2003-2011; PI: Wizdom Powell). Data for the AAMHSL were drawn from a cross-sectional study conducted in 3 independent waves from 2003 to 2011. Participants were recruited from various community and academic institutions throughout the United States. The goal of this analysis is to determine the underlying factor structure of depressive symptomatology and assess which psychosocial factors directly influence Black men's acquisition of a USOC. Aim 3 will be addressed with primary data collected using concept mapping methods which allow participants to explore Black men's experiences with depressive symptoms and its linkages to USOC status and health care seeking behavior. The goal of this analysis is to explore Black men's experiences with depressive symptoms and discuss linkages between these symptoms and USOC in this population.

Overall, the dissertation addresses gaps in the current evidence base by exploring direct and moderating factors in the depressive symptomatology-USOC acquisition association among

Black men. By employing a mixed-methods and participatory approach to this study, this dissertation further centers the perspectives of Black men in the academic discourse about the causes and mechanisms associated with USOC disparities by: 1) examining these disparities using a within-group approach to identify key race and gender-related and mental health barriers and facilitators; 2) eliciting perspectives of Black men to clarify the perceived role of race and gender-related factors, and depressive symptomatology in their persistent health care access; and 3) expanding conceptualizations of depressive symptomatology to include the ways they manifest among Black men.

The proposed aims will inform innovations in preventive health service delivery, such as quality improvement in the primary care setting and enhanced motivational interviewing practices aimed at sustaining Black men's health care engagement. Furthermore, understanding which depressive symptoms influence USOC status will allow researchers to further understand health care access patterns among this vulnerable group, and more importantly, identify individuals less likely to establish and maintain a USOC. Understanding psychosocial factors related to help-seeking will also highlight motivational influences on health care use that are driven by race and gender-related factors. Increased knowledge about psychosocial pathways to preventive health access will provide the foundation for enriched clinical interactions between primary care providers, preventive health service organizations, and Black men. The use of participatory methods to engage Black men in discussions related to health care use serves as an innovative and sustainable approach to soliciting participant-driven approaches to improved health care delivery. Taken together, the study extends our current understandings of the driving forces influencing Black men's USOC acquisition.

Organization

This dissertation is comprised of eight chapters. Chapter 1 frames the relationship between depressive symptomatology and a USOC as a significant public health problem among Black men. This chapter also includes an articulated rationale for employing a mixed methods and participatory approach for investigating these associations, as well as, the specific aims of the dissertation. Chapter 2 is a literature review which synthesizes the current evidence base linking depressive symptoms and USOC status among Black men. This chapter also highlights the role of intermediary psychosocial pathways in the proposed depressive symptom-USOC relationship. Chapter 3 outlines the theoretical framework(s) used to explain the hypothesized associations between depressive symptoms, gender and race-related factors, and a USOC. This chapter also integrates the Andersen Behavioral Model with additional theoretical frameworks to yield a comprehensive conceptual model for the dissertation study. Chapter 4 describes study design and analytic approach for each dissertation aim. Chapters 5-7 present the findings of my dissertation study through three manuscripts. Finally, Chapter 8 concludes with strengths, limitations, and highlights potential contributions of the dissertation study.

CHAPTER 2: LITERATURE REVIEW

Definition of a Usual Source of Care

A usual source of care (USOC), defined as a particular doctor's office, clinic, health center, or other place one goes to if they are sick or needs advice about health, is a critical entry point into the health care system in the United States (Blewett et al., 2008; DeVoe et al., 2011; Sox et al., 1998; Weissman et al., 1991). In response to the dynamic nature of the U.S. health care delivery system, definitions of USOCs in health services research have evolved. Early literature defined a USOC as a regular physician or doctor, which centered this indicator of health care access as a sustained interpersonal relationship between a patient and provider (Sox et al., 1998; Weissman et al., 1991). However, in recent years the definition has expanded to include a regular place in which patients access their care, such as a medical clinic or hospital outpatient center (Laiteerapong et al., 2014). This expansion is due, in part, to the emerging role of systems or hospital-based care in the U.S. health care system, particularly in preventive services (Jennifer E DeVoe et al., 2003). Guided by these studies, this dissertation will define USOC as either a regular provider, health clinic, or hospital outpatient center in which patients receive preventive health services.

Overview of USOC

The long-term benefits of establishing and maintaining a USOC have been well-documented (Blewett et al., 2008; DeVoe et al., 2011; Sox et al., 1998; Weissman et al., 1991). Individuals with a USOC have more centralized access to preventive health services, such as routine pap smears, cholesterol screening, and blood pressure monitoring (Blewett et al., 2008;

Corbie-Smith et al., 2002; K. T. Xu, 2002). Studies also show that having a USOC strengthens patient-provider relationships, which in turn, cultivates individual health promoting behaviors, such as timely receipt of preventive screening, lower reporting of substance abuse behaviors, and chronic disease management (Ettner, 1999).

Research further demonstrates that having a USOC enables patients to receive timely preventive care, and in some cases, is a stronger predictor of health care use than having health insurance (Sox et al., 1998). For instance, Xu and colleagues (2002) compared having a regular physician versus regular site as a USOC for several key preventive services. Findings revealed that while having a regular doctor was more impactful than having a regular site for blood pressure and cholesterol checkups, there were no significant differences for the use of flu shots, pap smears, and mammograms (K. T. Xu, 2002). It is important to note that emergency rooms are not typically considered an acceptable USOC and are usually excluded from analysis in studies. Studies excluding ERs from USOC characterizations cite the diminished continuity of care, limited capacity to address non-acute health issues, and poor quality of care in emergent health care settings (Halfon, Newacheck, Wood, & St Peter, 1996; Kasper, 1987). Thus, analyses proposed for this dissertation will exclude emergency rooms as a USOC option.

Race and Gender Inequities in USOC Acquisition

Despite the well-established benefits of securing a USOC, disparities persist among men of various racial and ethnic backgrounds. Compared to non-Hispanic White patients, non-Hispanic Blacks and Hispanics report a lower likelihood of having a USOC (Corbie-Smith et al., 2002; Gaskin et al., 2007). The receipt of timely health services is of added importance among marginalized racial and ethnic groups, who are at a heightened risk for chronic disease and deleterious health outcomes (J. Xu et al., 2016). Racial and ethnic disparities also exist in the preferred site for regular medical care. Minority patients are more likely to cite community health and hospital outpatient departments as their USOC compared to Whites (Collins et al., 2002). Moreover, minorities are more likely to report the emergency room as a regular site of care, which is systemically not equipped to address preventive health issues (Fiscella, Franks, Gold, & Clancy, 2000; Gaskin et al., 2007). A study conducted by Gaskin and colleagues (2007) further assessed barriers that may hinder regular health care use by race and ethnicity. Among Black respondents, 22% reported believing there is racial or ethnic bias in the delivery of medical treatment, compared to less than 9% of Whites. This analysis also found that Blacks were more likely to believe that health is maintained through self-management strategies (e.g. "how well I take care of myself") and luck than White respondents. Overall, researchers determined that both attitudinal and socioeconomic barriers, such as help-seeking preferences, perception of racial bias in health care delivery, and insurance status, present distinct challenges among minorities seeking regular care for medical needs.

Men are less likely to have a usual place to go for medical care than women across all racial/ethnic groups and age categories (Ward BW, 2016). Men in the United States are also less likely to seek help for medical problems and obtain preventive screenings at much lower rates than their female counterparts (Green & Pope, 1999; Neighbors & Howard, 1987; Viera, Thorpe, & Garrett, 2006). Black men's markedly higher rates of preventive health issues, chronic disease prevalence, and premature mortality further emphasizes the need for increased attention towards remedying disparities in health care utilization (Murphy, Xu, & Kochanek, 2013; Wong et al., 2006). While much of the extant literature cites socioeconomic-related determinants of USOC rates, studies examining Black men highlight a broader range of psychosocial influences to medical help-seeking (Griffith et al., 2011; W. P. Hammond, Matthews, & Corbie-Smith, 2010; W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011). One study by Hammond and colleagues (2011) found that poorer mental health status was associated with lower odds of reporting a USOC among Black men. However, the extent to which mental health status operates as a key contributor of USOC disparities in this population remain unexplored. This dissertation addresses these gaps by exploring the role of depressive symptomatology in USOC acquisition among a community-drawn sample of Black men.

Depressive Symptoms as a Key Psychosocial Factor of USOC Acquisition

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), major depressive disorder is characterized by nine symptoms: (1) depressed mood, (2) diminished interest/pleasure, (3) weight, (4) appetite increase/decrease, (4) insomnia/hypersomnia, (5) psychomotor agitation/retardation, (6) fatigue or loss of energy, (7) feelings of worthlessness or inappropriate guilt, (8) diminished ability to think or concentrate, and (9) recurrent thought of death or suicidal ideation (American Psychiatric Association, 2013b). To meet criteria for major depressive disorder, patients must exhibit five or more of the aforementioned symptoms, with at least one symptom falling in the first two categories. Mood disorders, like major depressive disorder, have been shown to impact attitudes towards health care services, such as perceived quality, communication, and trust towards the health care system (J. M. Thorpe et al., 2012). In fact, research suggests that depressive symptomatology may impair access to health care by diminishing one’s motivational state, communication patterns, and decreasing positive attitudes towards health care engagement (DiMatteo, Lepper, & Croghan, 2000; J. M. Thorpe et al., 2012).

Despite the high prevalence of major depressive disorder in the general population, presentation of symptoms has been shown to vary among patient populations. Depressed individuals present with unique symptom profiles and a wider spectrum of symptomatology than is reflected in clinical diagnostic tools (Fried & Nesse, 2015; Laurence J Kirmayer, 2001). One study found that among 3,703 depressed outpatients, only 2% of subjects endorsed the most common symptom profile (i.e., depressed mood and diminished interest) and about 14% of participants exhibited unique profiles that were not found throughout the study population (Fried & Nesse, 2015). Major depressive disorder is commonly diagnosed by aggregating symptomatology and determining the degree of their impact on everyday activities (American Psychiatric Association, 2013a). However, strict reliance on diagnostic criteria to determine degree of impairment, may result in a failure to detect individuals with lower depressive symptomatology severity who might benefit from clinical interventions. Similarly, individuals with subthreshold depression may experience undetected symptomatology that silently produce persistent motivational barriers to health care decision making. Affirming this possibility, a recent review by Cuijpers and colleagues (2007) found that although subthreshold depressive symptomatology has consequences similar to that of major depressive disorder, such as diminished quality of life, early detection and treatment may reduce the risk of developing major depressive disorder.

Studies also show that subthreshold depressive symptomatology, clinically described as minor depression, is a significant risk factor for the onset of major depressive disorder, functional impairment, and chronic disease (Albertorio-Diaz et al., 2017; Horwath, Johnson, Klerman, & Weissman, 1992; Wulsin & Singal, 2003). Compared to major depressive disorder, minor depression is characterized as a mood disorder that does not meet full criteria for major depressive disorder but has at least two depressive symptoms. One earlier study using data from the National Comorbidity Survey found that minor depression, according to the DSM III criteria, demonstrated rates of disability in a similar pattern to major depressive disorder (Ronald C. Kessler, Zhao, Blazer, & Swartz, 1997). Authors of this study also found similar disease courses between minor and major depressive disorder, reflected by analogous respondent percentages of depressive episodes, persistence of symptoms over time, and 12-month prevalence between the two groups. Results of this study suggest that minor depressive symptomatology is impactful and should not be dismissed clinically as a fleeting affective state.

Major Depressive Disorder and Depressive Symptomatology among Black Men

Nationwide, prevalence estimates among Black men indicate that between 5 to 10% of Black men suffer from major depressive disorder (E. Ward & Mengesha, 2013). Another study found lifetime prevalence of major depressive disorder was lower among Black men, but higher chronicity and disability was associated with this group compared with other Whites (56.5% vs. 38.6%, respectively) (D. R. Williams et al., 2007). Treatment-seeking behavior for depressive symptoms is also low among Black men, with one study showing only 30% of Black men with major depressive disorder reporting use of outpatient services, compared to 39% of Black females and 51% of non-Black males (E. Ward & Mengesha, 2013; E. C. Ward, Wiltshire, Detry, & Brown, 2013). These inequalities in help-seeking are particularly striking when examining the high correlations between major depressive disorder and suicide, post-traumatic stress, and physical health comorbidities among Black men (Chung et al., 2012; W. P. Hammond, 2012; Schnurr, Friedman, Sengupta, Jankowski, & Holmes, 2000). Given the lower prevalence of major depressive disorder and noted severity of depressive symptoms among Black men, explorations of associations between subthreshold depression and health care system engagement may yield more precise strategies for improving USOC uptake. Since less is also known about which symptoms produce the greatest barriers to health care system engagement, it is also critical to examine the underlying symptom structure. This dissertation investigates which clusters of depressive symptomatology are associated with the greatest barrier to USOC procurement among Black men.

Heterogeneity in depressive symptomatology

Researchers indicates that depressive symptoms presentation varies by racial and ethnic background (Hirschfeld, 1981; Kim et al., 2009; Kim et al., 2011; Sachs-Ericsson et al., 2007). Findings from these studies assert that while depressed minorities exhibit hallmark signs of the disorder (e.g. depressed mood, somatic symptoms, positive affect, and interpersonal problems), the experiences and meaning attached to these symptoms differs across racial boundaries. Furthermore, researchers found the presence of additional underlying factors that are unique contributors to major depressive disorder in the Black community, such as demoralization and distress (Kim et al., 2011). The dearth of extant literature examining depressive symptoms among Black men suggest the need for additional research to determine which factors produce acute barriers for USOC acquisition in this population. This dissertation will strengthen the evidence base, first, by examining the heterogeneity of depressive symptomatology among Black men, and, second, by using mixed methods to explore which specific depressive symptoms present the greatest barriers to securing a USOC.

Measurement of depressive symptomatology

Population-based measures of depressive symptomatology is of critical importance for assessing mental health trends in the general population. These instruments have evolved over time to accurately capture affective sequalae characterizing its presentation across a diverse range of individuals. One of the most widely used measures of depressive symptomatology in population-based research is the Center for Epidemiological Studies Depression Scale (CES-D). The CES-D was developed in 1977 by Laurie Radloff to capture trends in psychiatric epidemiology (Radloff, 1977). The scale is a self-report measure of common functional domains that encompass clinically diagnosed major depressive disorder and is best suited to assess symptomatology in the general population.

Since its' inception and first use in the 1970's, the CES-D has been found suitable for research in different racial, ethnic, and age groups (Perreira et al., 2005; Roberts, 1980). Through these investigations, scholars demonstrate variations in the factor structure of the CES-D across diverse populations (Hertzog, Van Alstine, Usala, Hultsch, & Dixon, 1990; Kim et al., 2009; Kim et al., 2011; Makambi, Williams, Taylor, Rosenberg, & Adams-Campbell, 2009; Roberts, 1980). The original 20-item scale assesses four major conceptual domains of depressive symptomatology: (1) positive affect, (2) depressed affect, (3) interpersonal problems, and (4) somatic symptoms. Studies examining the CES-D factor structure through confirmatory factor analysis identify as few as two (e.g. depressed and positive affect) and as many as seven (e.g. depressive affect, somatic activity, positive affect, interpersonal, anxiety, introspection, and crying) factors from the original 20 item scale (Kim et al., 2011; Posner, Stewart, Marín, & J. Pérez-Stable, 2001). Since then, the CES-D scale has been abbreviated to a 10 and 12-item scale to more efficiently capture depressive symptom structures across the general population (Assari & Moazen-Zadeh, 2016; Kim et al., 2011).

Gender and Race-Related Factors Associated with USOC Status

The potentially deleterious impact of depressive symptomatology on Black men's USOC status may be modulated by additional psychosocial factors related to race and gender. Although previous research explores the independent influence of these factors, few studies examine their joint effect in driving USOC disparities among Black men. In this section, I focus on factors demonstrated in previous investigations to influence Black men's emotional disclosure, detection of, and coping with depressive symptoms. These factors include masculine role norms salience, restrictive emotionality, racial centrality, and John Henryism, which also appear to influence help-seeking among Black men (Lehto & Stein, 2013; Matthews et al., 2013; Powell, Adams, Cole-Lewis, Agyemang, & Upton, 2016).

Masculine role norms salience, defined as the shared cultural expectation of the male gender role, is one socialized aspect of identity that has been linked to health promoting behaviors (Addis & Mahalik, 2003; Levant et al., 1992). Masculine role norms salience are viewed as socially constructed and often position male help-seeking as a form of weakness (Courtenay, 2000). The impact of adherence to rigid masculine role norms salience on health care use may be exacerbated when individuals experience events that diminish motivational influences to seek care, such as depressive symptomatology (Moller-Leimkuhler, 2002). Scholars suggest that although men's health care engagement is guided by masculine role norms salience, their influence is largely dependent upon the salience or level of importance assigned to these norms (Addis & Mahalik, 2003). To be certain, research finds more barriers to health help-seeking among Black men ascribing higher salience to masculine role norms salience (Powell et al., 2016). Yet, further research is warranted to understand how masculine role norms salience operate when Black men are making decisions about whether to obtain a USOC.

Researchers also posit that prevailing masculine role norms salience sanction the appropriateness of disclosing issues to others and, thus, inhibits help-seeking through a USOC (Addis & Mahalik, 2003; Moller-Leimkuhler, 2002; Townes, Chavez-Korell, & Cunningham, 2009). Restrictive emotionality is one dimension of masculine role norms salience that disparages disclosure of problems in order to preserve one's masculine self-concept (Levant et al., 2007) and negatively influence attitudes towards help-seeking (Berger, Levant, McMillan, Kelleher, & Sellers, 2005; Mansfield, Addis, & Courtenay, 2005; Tudiver & Talbot, 1999). Among Black men, studies also show that depressive symptomatology may be further exacerbated by masculine role norms salience like restrictive emotionality, which censures crying, sadness, and vulnerability (Good & Wood, 1995; W. P. Hammond, 2012; Vogel, Heimerdinger-Edwards, Hammer, & Hubbard, 2011). My dissertation asserts that endorsement of masculine role norms salience encouraging restrictive emotionality may work in similar ways to impact Black men's healthcare seeking behaviors. In other words, it is likely Black men reporting higher endorsement of restrictive emotionality will have lower odds of acquiring a USOC.

Masculine role norms are also culturally situated and influenced by one's racial and ethnic background. As such, Black men's masculine role norms salience or beliefs about what it means to be a man may be shaped by social by-products of race or cultural heritage. Racial identity, which is a sense of belonging based on one's shared common heritage with a particular racial group, is one social by-product of race hypothesized to influence Black men's masculine role norms salience (Sellers, Rowley, Chavous, Shelton, & Smith, 1997a). Scholars further posit that masculine norms and racial identity operate together to shape attitudes towards help-seeking for Black men (Griffith, 2012; Powell et al., 2016). The Multidimensional Inventory of Black Identity (MIBI) is one of the most widely used measures of Black racial identity (Sellers et al., 1998) and consists of 7 subscales representing 3 dimensions of Black racial identity: centrality, ideology, and regard. Centrality refers to the extent to which being Black is an integral part of one's self-concept. The ideology dimension incorporates one's beliefs and attitudes regarding how in-group members should behave. Ideology, thus, includes an individual's opinions towards how Black people should behave within society and is delineated by nationalist (e.g. the importance being of African descent), oppressed minority (e.g. expressed commonalities with other marginalized groups), assimilationist (e.g. expressed commonalities with mainstream society), and humanist (e.g. expressed commonalities of all humans) sub-dimensions. Finally, regard refers to the dimension of racial identity associated with one's judgement of one's own race based on both personal and public opinions of the Black race.

Applications of the MIBI scale reveal that some dimensions of racial identity operate differentially based on situational contexts (Shelton & Sellers, 2000). Although studies show one's regard and ideology related to Black identity remain constant in varying social settings, racial centrality has been shown to differ in more race-salient environments (Jones, Lee, Gaskin, & Neblett Jr, 2014; Powell et al., 2016; Seaton, Yip, & Sellers, 2009). Specifically, settings that elicit higher racial centrality may influence one's interpretations and behaviors in these environments. One study by Shelton and Sellers (2000) found that individuals were more likely to report high racial centrality in race-salient conditions, such as simulated arguments between Black and White individuals. One recent study assessed racial centrality in the health care context and found that individuals with higher centrality were more likely to perceive discrimination in the health care system and, in turn, reflected more medical mistrust than those with low centrality (Cuevas & O'Brien, 2017). Authors of the study conclude that the degree to which a patient identifies with Black identity may make the individual more attentive to social cues and produce mistrust in the health care system. In relation to Black men's USOC acquisition, racial centrality may produce heightened mistrust of the health care system which, in turn, may result in lower rates of USOC acquisition. This proposed pathway is informed by research linking higher rates of medical mistrust among Black patients with lower use of preventive health services (Adams, Richmond, Corbie-Smith, & Powell, 2017; W. P. Hammond, Matthews, et al., 2010b; LaVeist, Isaac, & Williams, 2009). Given these findings, this dissertation will extend understanding of racial centrality to assess the unknown effects of this construct on USOC acquisition.

Studies examining racial and ethnic health disparities among Black men also highlight the role of active coping dispositions that are situated in cultural norms of strength and self-reliance (Bennett et al., 2004; Hudson, Neighbors, Geronimus, & Jackson, 2016; Watson, Logan, & Tomar, 2008). John Henryism is a coping disposition characterized by one's engagement in prolonged high-effort activities in response to psychosocial stressors. Extant literature finds that individuals reporting higher John Henryism also experience deleterious health outcomes, such as high blood pressure, increased BMI, and premature mortality (S. A. James, 1994). However, findings from studies assessing associations between John Henryism, depressive symptoms, and help-seeking are mixed. One study found that John Henryism moderates the positive association between racial discrimination and depressive symptomatology, such that relationship was weaker for men with higher scores of John Henryism than men with lower scores (Matthews et al., 2013). However, other studies focused more broadly on Black respondents found a positive association between John Henryism and depressive symptomology in the context of racial discrimination (Hudson et al., 2016; Neighbors, Njai, & Jackson, 2007). A single study by Powell et. al. (2016) determined that John Henryism was not significantly associated with help-seeking barriers among Black men when considered simultaneously with masculine norms. Given the mixed evidence surrounding the role of John Henryism in mental health help-seeking contexts, this dissertation will model the construct as a moderator to determine how it may differentially modulate USOC acquisition.

Taken together, the research highlighted above suggest that masculine role norms salience, racial identity, and John Henryism work synergistically to impact USOC disparities among Black men. This dissertation extends the current body of evidence documenting the role played by psychosocial factors in Black men's health care access. Further, the proposed research helps to illuminate gender and race-related factors that can be modified or leveraged to increase Black men's likelihood of securing a USOC.

Summary and Synthesis

A USOC is a critical indicator of preventive health services use and may increase continuity of health care and prevent premature mortality. This health access indicator creates opportunities for developing sustained relationships between patients, providers, and health care systems that may increase engagement in the health care system as a whole. Despite the widely accepted benefits of having a USOC, disparities exist across racial and gender groups. Examining this disparity among Black men, researchers focus mostly on socioeconomic factors and position financial barriers as major drivers of USOC access. However, the influence of other motivational barriers to help-seeking may be exacerbated in the presence of depressive symptoms. The negative association of depressive symptomatology on health access may also be heightened by race and gender-related factors. As such, this dissertation focuses on the role of depressive symptomatology and identity-related psychosocial factors hypothesized to work, in concert, to impact Black men's USOC acquisition.

Although studies have assessed the role of each psychosocial factor (e.g. racial centrality, John Henryism, masculine role norms salience, and restrictive emotionality), few have examined how these factors operate collectively in the context of health care access. Addressing these key evidentiary gaps, this dissertation will examine the unique constellation of self-reported depressive symptomatology and its impact on USOC procurement among Black men. The following chapter highlights theoretical foundations supporting the central theme of this dissertation. Variables identified within this review will be presented along with a theory-based rationale for inclusion.

CHAPTER 3: THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

Current theoretical examinations of racial and gendered health service disparities target a myriad of help-seeking outcomes, including health visits, receipt of preventive services, and patient attitudes towards health care (Addis & Mahalik, 2003; Fogarty, 1997; Powell et al., 2016). Previous studies examining these health service disparities draw from a range of behavioral theories aimed at predicting access and utilization of health services. However, these theories, alone, do not account for the full range of psychosocial drivers of health access inequities. Previous theoretical explanations of health care disparities also exclude Black men in their conceptualization of barriers and facilitators to a usual source of care. To address these gaps, this dissertation uses an integrated theoretical approach to examining psychosocial factors unique to Black men's USOC acquisition. Specifically, this dissertation relies on the integration of four frequently employed theoretical frameworks and models: (1) The Gelberg-Anderson Model Behavioral Model for Vulnerable Populations (GBM), (2) Intersectionality theory, (3) the Transactional Model of Stress and Coping (TMSC), and (3) Psychological Reactance Theory.

Andersen Model of Behavioral Health

The Andersen Behavioral Model has been used in various studies to explain individual patterns of health care use, including geographic, racial/ethnic, and gendered access to clinical health services (Arcury et al., 2005; Dunlop, Manheim, Song, & Chang, 2002; Gaskin et al., 2007; W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011). Originally developed in the 1960's, the initial model posits that health care use is determined by three sets of interrelated factors: (1) predisposing characteristics (e.g.

demographics and health beliefs), (2) enabling resources (e.g. personal/family or community), and (3) need factors (either perceived or evaluated) (Andersen, 1995). Over time, the model has evolved to address emerging issues in health services research and identify barriers and facilitators of health service engagement (Andersen, 2008).

The Andersen model has been critiqued for its limited applicability to diverse patient populations (Gelberg, Andersen, & Leake, 2000). In response, Gelberg and Andersen constructed a revised model to assess factors influencing access to care among vulnerable populations. Components of the Gelberg-Andersen Behavior Model for Vulnerable Populations (GBM) mirror the preceding model by explaining health utilization patterns as a function of predisposing, enabling, and need factors. However, the revised theory is distinguished by the inclusion of domains that may differentially impact vulnerable groups, such as use of social services, housing conditions, and societal structure. Inclusion of such factors enhances the applicability of GBM for Black men, who display disparate patterns of health care use compared to other marginalized populations (Griffith et al., 2011). Moreover, extant literature using GBM characterizes health care access as an enabling predictor of subsequent health care utilization (Babitsch et al., 2012; Gabrielian, Yuan, Andersen, Rubenstein, & Gelberg, 2014; Stein, Andersen, & Gelberg, 2007), thus limiting examinations of USOC as a critical health outcome. Building on the Gelberg-Andersen model, this dissertation positions USOC as a critical health services outcome among Black men. Furthermore, the proposed dissertation studies extend the utility of this model by including psychosocial moderators that may uniquely influence USOC among Black men.

Intersectionality

Research linking psychosocial factors to health care indicators rarely apply an intersectional lens to explicate the role of multiple identities and help-seeking. Such an approach is critical to investigations seeking to explicate the joint influence of race and gender-related factors as key barriers to access in the health system. Originating from Black feminist scholarship, intersectionality theory is an integral framework used by researchers to understand health disparities among vulnerable populations (Bowleg, 2012). In contrast to other theoretical positions which suggest one aspect of identity singularly impacts outcomes, intersectionality suggests that social identities (e.g. race, gender, class, etc.) are mutually constitutive and operate in concert with one another within multiple systems of oppression (Crenshaw, 1991). I address existing conceptual gaps in this dissertation by incorporating intersectionality theory. More specifically, I posit that Black men's social identities (e.g. race and gender) operate together in health care seeking contexts to shape their decisions to secure key resources (i.e., USOC) (Crenshaw, 1989, 1991).

Intersectionality theory also highlights the importance of assessing associations between social identities and outcomes using a within-group approach. This theoretical framework, in contrast with those encouraging comparative analyses, allows researchers to fully investigate the unique aspects of structural disadvantage that yield deleterious health outcomes in vulnerable patient populations (Weber & Parra-Medina, 2003). Applying the theory to health disparity research, Lisa Bowleg (2012) argues that the amount and variation of identities (e.g. race/gender or race/gender/class, etc.) examined in an intersectional approach are context-dependent, meaning that the chosen identities have special significance in the observed research setting. For instance, studies show that both race and gender play an influential role in the utilization of health care services in the United States (Clark et al., 1999; Dunlop et al., 2002; LaVeist et al., 2009; Williams, 2003). However, less is known about the how these identities interact in the health care setting to produce observed inequalities among marginalized groups. Scholars suggest that examination of race and gender, simultaneously, among Black men would further explicate persistent inequities of health care access and utilization (Griffith, 2012; R. J. Thorpe, Jr. et al., 2015). Black men's disparate access to a USOC is not fully explained by one aspect of their social identity, but rather it is a product of mutually reinforcing masculine role norms salience and racial identity. In this dissertation, I will use intersectionality theory to explain the hypothesized role of gender and race-related factors that contribute to USOC disparities. Furthermore, given the heterogeneity in factors impacting health care decision-making among Black men, I propose using a within-group approach.

Transactional Model of Stress and Coping

Experiencing depressive symptomatology can be stressful for Black men, particularly those who rigidly endorse masculine role norms salience. Thus, the integration of frameworks that explain the stress-appraisal and coping process is warranted. The Transactional Model of Stress and Coping (TMSC), was developed to explore the impact of stressors and the appraisal process that influence health behaviors (Lazarus & Cohen, 1977; Lazarus & Folkman, 1984). TMSC posits that the impact of a stressor, defined as an internalized or externalized demand that may impact one's physiological or psychological functioning, is influenced by an individual's appraisal processes, emotional regulation strategies, and coping resources. In the two-part appraisal process, individuals cognitively evaluate the stressor and assess the resources used to mitigate its impact. During primary appraisal, the individual judges the significance of a particular event as stressful or threatening. Through this process, meaning is ascribed to a stressful event based on one's dynamic status of identity and self-concept. The secondary appraisal phase assesses situational stressors in which individuals evaluate their ability to control and cope with the stressor using available resources. During this phase, individuals determine whether the stressor is malleable to change, manage their emotive response, and/or their adaptive coping strategies to mitigate perceived harm associated with the stressor. A key distinction from primary appraisal processes is that, during secondary appraisal, individuals assess what resources they can deploy to cope with environmental stressors.

In the past decade, studies focused on Black men have considered the unique stress-appraisal and coping processes that influence health behaviors (Banks & Kohn-Wood, 2007; Chung et al., 2012; Townes et al., 2009). In fact, empirical evidence suggests that Black men's appraisal of threatening stimuli is largely dependent on the extent to which they assign meaning to their racial and masculine role identities. Racial centrality, or the importance of being Black to one's identity, is one such factor that has been examined in the primary appraisal process among Black men. Scholars employing stress and coping frameworks posit that racial centrality buffers Black men's mental health from the potential negative impacts of external stressors (S. Cohen & Wills, 1985). Indeed, studies exploring the mental health effects of racial identity find that this aspect of the self protects individuals from everyday discrimination, racial profiling, and workplace discrimination (Mays, Cochran, & Barnes, 2007; Seaton et al., 2009; Sellers & Shelton, 2003). Moreover, a recent study found that racial centrality operates differently in the health care context by enhancing one's perceptions of externalizes stressors or demands (e.g., racial discrimination) (Cuevas & O'Brien, 2017).

Strategies employed to assess the manageability of internalized stressors or demands may further produce inequities in Black men's USOC acquisition by discouraging disclosure in health care settings. Extant studies examining help-seeking by race and gender cite emotion restriction, described as limited disclosure of emotional issues, as a unique psychosocial factor driving men’s higher reluctance to seeking professional help compared to their female counterparts (Addis & Mahalik, 2003; Leaf et al., 1985; Moller-Leimkuhler, 2002; Vogel et al., 2011). These barriers to help-seeking among men, compared with women, may be due to the incongruence between masculine norms of strength and the vulnerable state of seeking clinical services (Courtenay, 2000). Researchers examining this gendered help-seeking disparity among men rely largely on multidimensional measures of masculine norms, such as the Masculine role norms salience Inventory (MRNI) (Levant et al., 2007; Levant, Wimer, & Williams, 2011). Using this measure, studies identify restrictive emotionality, or the limited disclosure of problems to maintain one’s masculine self-concept, as the primary dimension of masculinity norms influencing men’s more limited health care engagement. Specifically, these authors suggest that such norms proscribe any admission of or engagement in activities that signal vulnerability (e.g., health care system engagement) as signs of weakness (W. P. Hammond, 2012; Harris III, Palmer, & Struve, 2011; Jakupcak, Salters, Gratz, & Roemer, 2003). Taken together, these findings suggest that men who place a high degree of importance on restrictive emotionality will also fail to procure a USOC.

Secondary appraisal also refers to coping resources used to address stressful stimuli (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). These coping resources, which can function as stable or fixed dispositional characteristics, are theorized to activate in various situational contexts (Carver & Scheier, 1994; F. Cohen & Lazarus, 1973). Active coping dispositions, characterized as personality dispositions or traits that reflect effortful and self-reliant actions, have been associated with help-seeking and health outcomes among Black men (W. P. Hammond, Fleming, & Villa-Torres, 2016; Lehto & Stein, 2013; Neighbors et al., 2007). For example, studies show that Black men enable active coping dispositions as a tool to preserve masculine norms of self-reliance and hard work. John Henryism is one such active dispositional coping style linked to deleterious physical and mental health outcomes for Black men (Sherman A James, 1994; Lehto & Stein, 2013; Matthews et al., 2013). Matthews and colleagues further determined that John Henryism works in concert with masculine role norms salience (e.g., restrictive emotionality) to impact depressive symptoms among Black men. Yet, the mutual impact of restrictive emotionality and John Henryism on the depressive symptoms-healthcare access relationship remains largely unexplored (Graham, 2015; Somerfield & McCrae, 2000; Sprangers & Schwartz, 1999). Filling this gap, my dissertation frames depressive symptomatology as an internalized stressor or demand and treats racial centrality, masculine role norms salience, and John Henryism as core parts of the stress appraisal process impacting Black men's USOC acquisition. My model specifically suggests that racial centrality, John Henryism, restrictive emotionality, and masculine role norms salience moderate the negative association between depressive symptoms and USOC. The moderation will occur such that the negative association will be stronger for Black men with higher levels of these psychosocial factors than those with lower levels.

Psychological Reactance Theory

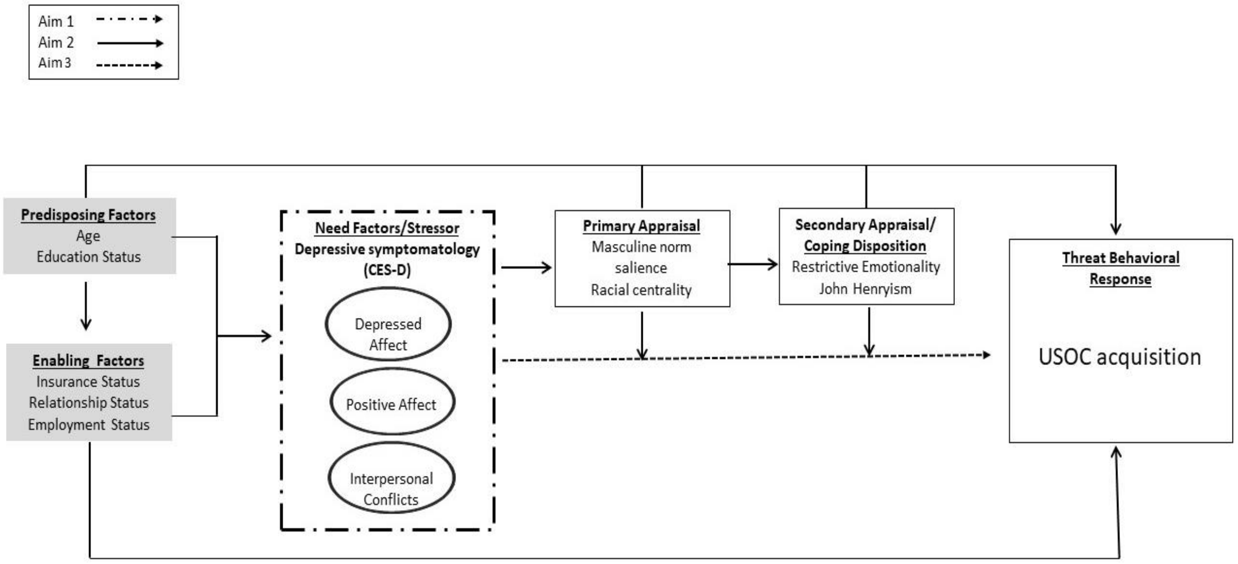
Psychological reactance theory, which posits that individuals engage in behavior as a way of maintaining freedoms in the context of threatening stimuli, has been used to further contextualize reduced help-seeking and subsequent health outcomes among men. Within this framework, freedoms are defined as affective, cognitive, and behavioral factors that can be threatened in the presence of stressors (Brehm, 1966). Studies applying psychological reactance theory in the health care setting are scarce, but identify diminished health care engagement as a consequence of patient's perceived lack of control in the clinical encounter and in health care decision-making (Fogarty, 1997). For men, threats to behavioral freedoms may also include those that contest prevailing masculine norms that disparage medical help-seeking (Addis & Mahalik, 2003; Powell et al., 2016). Consequently, the decision to engage in health systems may be driven by appraisals of threats to both masculine identity and the autonomy to maintain one's own health (W. P. Hammond et al., 2016; W. P. Hammond, Matthews, et al., 2010b)

Social identities, such as masculine role norms salience and racial identity, influence how Black men appraise and react to these threats in health care settings. Perhaps the most damaging norms are those that suggest help-seeking and the experience of negative affect is indicative of weakness (Addis & Mahalik, 2003; Mahalik et al., 2007; Mansfield et al., 2005; Syzdek, Addis, Green, Whorley, & Berger, 2014). For Black men who assign more importance to these male norms, the presence of depressive symptoms may encourage them to limit exposures to health care settings to prevent experiencing additional identity threats and marginalization. To test reactance theory in more depth, this dissertation situates masculine role norms salience and racial centrality as key social identities activated by Black men when they assess the potential threats to behavioral freedoms imposed by health care system contact. I hypothesize that Black men who experience greater depressive symptomatology and report higher racial centrality and masculine role norms salience will have diminished motivation to secure a USOC.

Theoretical Synthesis and Description of Conceptual Framework

Thus far, theoretical frameworks linking affective states (e.g. depressive symptomatology) and health services research have included well-established models of health care use and stress and coping. However, few studies explore the mutually constitutive influence of gender and race-related factors on health care access factors among Black men (Griffith et al., 2011; Powell et al., 2016). Moreover, few studies have examined reduced help-seeking among Black men as a function of psychological reactance to threats produced by the experience of depressive symptoms. My conceptual model (Figure 3.1) frames disparate rates of USOC reporting as a result of psychosocial factors impacting Black men’s help-seeking decisional processes. Each construct examined in the dissertation study is captured within this integrated theoretical framework and outlined in Table 3.1. Building principally on the Gelberg-Andersen Behavioral Model for Vulnerable Populations, this dissertation: a) examines depressive symptom heterogeneity among Black men (Aim 1), b) models psychosocial moderators that influence a USOC (Aim 2), and (c) explores Black men’s perspectives of depressive symptoms and its influence on USOC procurement (Aim 3).

Figure 3.1: Integrated Theoretical Framework for Dissertation Study



Grayed boxes indicate control variables in the dissertation study

Table 3.1: Description of Theoretical Constructs and Associated Study Variables

Conceptual Model Component	Construct definition	Theory informing conceptual model construct	Measures used in the Dissertation study to assess theoretical construct	Study Aim
Predisposing factor	Factors influencing one's predisposition to use services, such as demographic characteristics, social structure, and health beliefs	GBM	Age, education (Control variables)	Aim 2
Enabling factor	Factors influencing one's access to health services, such as social support, social services, and family/peer resources	GBM	Insurance, relationship, and employment status (Control variables)	Aim 2
Need factor	Factors influencing one's need for health care, including chronicity, severity, and perceived health status	GBM	Depressive symptomatology (CES-D)	Aims 1, 2, and 3
Primary Appraisal	One's evaluation of the significance of a stressor or threatening event	TMSC, Intersectionality	Masculine norms salience Racial centrality	Aim 2

Conceptual Model Component	Construct definition	Theory informing conceptual model construct	Measures used in the Dissertation study to assess theoretical construct	Study Aim
Secondary Appraisal	Evaluation of controllability of stress and a person's coping resources	TMSC, Intersectionality	Restrictive emotionality John Henryism	Aim 2
Coping Disposition	A generalized emotional or functional reaction to a stressor	TMSC, Intersectionality	John Henryism	Aim 2
Threat Behavioral Response	A behavioral reaction to threatening stimuli that limits behavioral autonomy	Psychological Reactance Theory	Usual Source of Care Acquisition	Aims 1, 2, and 3

GBM: Gelberg-Andersen Behavioral Model

TMSC: Transactional Model of Stress and Coping

CHAPTER 4: METHODS

The overarching research question of this dissertation is: *How does depressive symptomatology influence usual source of care reporting among Black men?* To best assess the determinants influencing USOC procurement, this dissertation uses a mixed-methods approach to understand how depressive symptoms manifest among Black men to influence preventive health access. Specifically, I employ a concurrent triangulation methodological approach to cross-validate findings in my quantitative study (Aims 1 and 2) and mixed-methods study (Aim 3) (Creswell & Creswell, 2017). The concurrent triangulation design allows me to further validate results across quantitative and qualitative approaches to provide a richer understanding of study findings compared to a single method.

Study Aim 1

Aim 1: To assess the factor structure of the CES-D in a community sample of Black men

RQ1: What factors are related to depressive symptomatology among Black men?

Hypothesis 1:

(a) Depressive symptoms, measured through the CES-D, will represent one latent factor clustered along three correlated dimensions: positive affect, negative affect, and interpersonal problems.

Study Aim 2

Aim 2: To investigate direct and moderating associations between CES-D factors and Black men's USOC procurement.

RQ2: Which factors associated with depressive symptomatology are related to Black men's reporting of a usual source of care (direct effect)?

RQ3: Do psychosocial factors related to race and gender (e.g. masculine role norms salience, racial centrality, restrictive emotionality, John Henryism, etc.) moderate the relationship between depressive symptoms and USOC among Black men (moderated effect)?

Hypothesis 2:

(a) Men with depressed affect and interpersonal conflict-related symptoms will be less likely to report a USOC than other factors related to depression, as measured by the CES-D.

(b) The association between depressive symptoms and USOC among Black men will vary by race and gender-related psychosocial factors (e.g. racial centrality, John Henryism, masculine role norm salience, and restrictive emotionality) such that they will hold an exacerbating moderating effect on the depressive symptom-USOC relationship.

Study Aim 3

Aim 3: To use participatory concept mapping methods to conceptualize depressive symptomatology and its connection to USOC access among Black men.

RQ4: How do Black men conceptualize depressive symptomatology and its influence on use of a usual source of care?

Hypothesis 3:

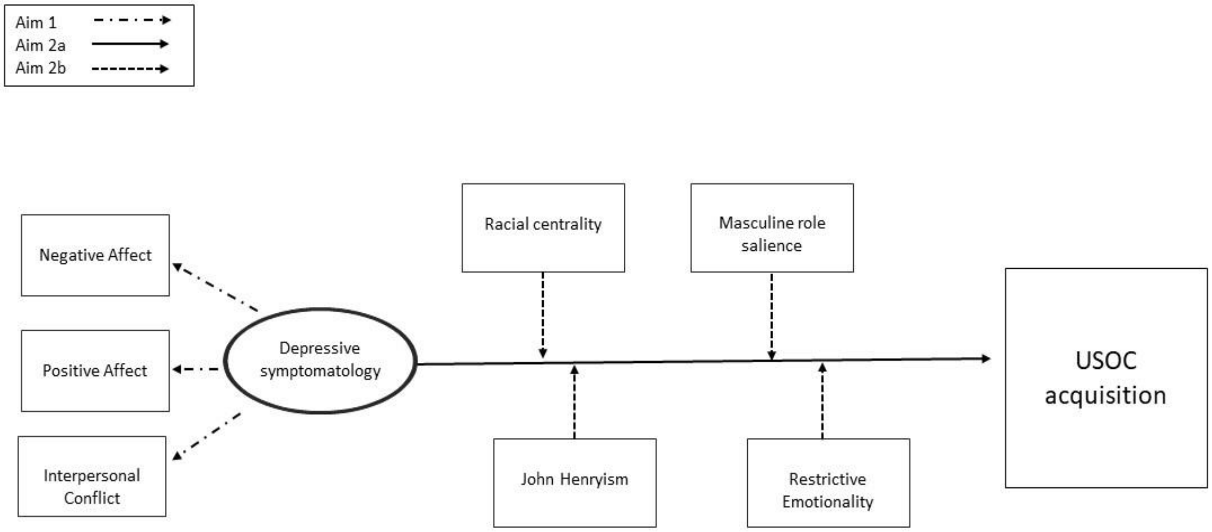
(a) Men will conceptualize additional underlying and latent factors associated with depressive symptomatology that are distinct from commonly used psychometric measures of major depressive disorder.

The purpose of this aim is to further contextualize findings from Aims 1 and 2. Thus, this aim was conducted and analyzed concurrently along with the quantitative aims. Using concept mapping, I identified conceptual domains of depressive symptomatology among Black men, and determined which domains are most important to USOC use.

Analytic Model of Quantitative Analysis (Aims 1 and 2)

The analytic model below (Figure 4.1) illustrates the relationships tested in Aims 1 and 2 of the dissertation study.

Figure 4.1: Analytic Model of Quantitative Research Aims



Quantitative (Aims 1 and 2) Data Source

To address my quantitative aims, I conducted a secondary data analysis of survey data from the parent study entitled “The African American Men’s Health and Social Life Study” (AAMHSL) (PI: Wizdom Powell, University of North Carolina at Chapel Hill). The questionnaire assessed men’s early life healthcare experiences, religious/spiritual values, experiences with daily stress (general and race-related), gender norms, and current health care utilization practices. Convenience sampling methods were used in the AAMHSL to recruit a sample of Black men from various academic and community settings. Most participants (80.7%)

were recruited from barbershops in Michigan and Georgia. The remainder of the study participants (19.3%) were recruited from academic institutions and events, which included a conference for African American men sponsored by a professional labor association. The academic institution was a community college located in Southeastern Michigan, and a historically Black university (HBU) in central North Carolina. Fifty percent of the community college population was male and 22% were ethnic minorities. The HBU student population was 77% African American and 33% male.

Black men age 18 and older were recruited through a variety of means, including flier advertisements, direct contact, word-of-mouth, specially advertised data collection events, and e-mail solicitation. Men who expressed interest in the survey were directed to study personnel. Before the study proceeded, informed consent was obtained and the anonymous self-administered survey was administered (See Hammond, et al., 2010; Matthews, Hammond, Nuru-Jeter, Cole-Lewis, & Melvin, 2012).

Barbershops with a high customer volume were prioritized as recruitment sites because they typically had long wait times which minimized the amount of additional time required to complete the questionnaire by study participants, and because barbershops have previously. been shown as being patronized by a socioeconomically diverse group of Black men (Hart Jr & Bowen, 2004). Initial contact with barbershops was made in-person or by telephone by study personnel. Upon agreeing to participate, signed consent forms were completed by barbershop owners. Barbers or receptionists, not study personnel, invited men to complete the questionnaire. Men who completed the questionnaire received a voucher for a free haircut, valued at $25. As an incentive for their participation in the study, the barbershop retained any unused value of the voucher. A four-year Historically Black College and a predominately White university also served as recruitment sites. Recruitment methods were similar at these sites, with the exception that study personnel recruited Black men rather than barbershop staff. Study participants were also encouraged to spread the word about the research team's presence and invite their Black male friends to complete a questionnaire. The research team solicited study participation in high-traffic areas such as the student union or eating areas at academic institutions; within the local public library study personnel were situated in a designated space to facilitate the recruitment process. Participants not recruited at barbershops received a $25 gift card. All study procedures were reviewed and approved by the Public Health-Nursing Institutional Review Board at The University of North Carolina at Chapel Hill.

Methods for Quantitative Aims 1 and 2

Aim 1 explores the heterogeneity of depressive symptomatology among Black men using a confirmatory factor analysis (CFA) approach. To test my hypothesis, I used a structural equation modeling (SEM) approach to determine whether the factor structure and loadings for depressive symptomatology items measured by the CES-D scale are the same as previously hypothesized (Radloff, 1977). Aim 2 explores direct and moderating effects of psychosocial determinants and stress-affective factors (e.g. racial centrality, masculine norms salience, John Henryism, and restrictive emotionality) related to the depressive symptomatology-USOC relationship. This aim draws from findings of Aim 1, particularly the confirmed factor structure and loadings of the CES-D scale, to determine which symptom structures are most salient for USOC status. Additionally, I conducted a latent moderated structural equations (LMS) analysis to determine the extent to which psychosocial factors influence the depressive symptomatology-USOC relationship. Below, I describe my methodological approach to conduct each research aim.

Study Measures for Aim 1 and 2

Dependent variable

Usual source of care: A usual source of care (USOC) was collected in the AAMHSL survey by responses to the question "Is there a particular person or place (e.g. doctor's office, clinic, health center, or other place) that you usually go to if you are sick or need advice about your health?"

Independent variable

Depressive symptomatology: Depressive Symptomatology was assessed using the 12-item version of the Center for Epidemiological Studies Depression Scale (CES-D). This 12-item scale was administered as part of the AAMHSL study to assess depressive symptoms and has been previously validated in the proposed study population (Radloff, 1977; Roberts, 1980). This abbreviated version of the CES-D has been found to have acceptable reliability and a similar factor structure compared to the original 20-item version. Responses range between 0 ("rarely or none of the time") to 3 ("most or all of the time") and are summed to create an overall continuous score. Possible scores range between 0 to 36, with higher scores indicating more depressive symptomatology. The Cronbach's α for the CES-D scale is 0.79. Sample questions include: "I felt depressed", "My sleep was restless", and "I felt that I did was an effort".

Moderating variables

*Racial identity (centrality)***:** Racial centrality was assessed using a 4-item centrality subscale of the Multidimensional Inventory of Black Identify (MIBI) (Sellers, Rowley, Chavous, Shelton, & Smith, 1997b). The centrality scale measures the importance of being Black to the respondent's identity. Response range from 1 ("Strongly Agree") to 7 ("Strongly Disagree"). Higher values on the racial centrality scale signify stronger endorsement of Black race as central to one's identity. The Cronbach's α for the racial centrality subscale is 0.87. Sample items include: “In general, being Black is an important part of my self-image”, “I have a strong sense of belonging to Black people”, “I have a strong attachment to other Black people”, and “Being Black is an important reflection of who I am”.

Masculine role norms salience: Masculine role norms salience was assessed using 2 scales: The Restrictive Emotionality and Masculinity Norms Salience scale. Restrictive Emotionality was assessed using a 7-item subscale within the MRNI scale to assess masculinity norms associated with emotional disclosure (Levant et al., 2007). For this subscale, a mean score was computed from responses ranging from 1 (“Strongly Disagree”) to 7 (“Strongly Agree”). The Cronbach’s α for this scale is 0.79. Sample items include “A man should never reveal worries to others”, “One should not be able to tell how a man is feeling by looking at his face”, and “Men should not be too quick to tell others that they care about them”. Masculinity norms salience was assessed using a 9-item scale to assess the importance of masculinity norms to men’s identity. This scale was developed from a qualitative study assessing manhood and meaning among Black men (W. P. Hammond & Mattis, 2005). Men were asked, “How important are the following characteristics (e.g., being strong, in control in a relationship, and independent) to your identity as a man?” and to rate responses on a scale ranging from 1 (“not at all important”) to 5 (“extremely important”). Higher values indicated more importance ascribed to masculine role identity. The Cronbach’s α for this scale is 0.81.

John Henryism: John Henryism was assessed using the 12-item John Henryism Scale for Active Coping (S. A. James, 1994). This scale is used to assess an individual’s general coping tendencies. Responses range from 1 (“Completely False”) to 5 (“Completely True”) and are summed to provide a continuous measure. The Cronbach’s α for this scale is 0.88. Sample items include: “I don’t let my personal feelings get in the way of doing a job”, “I am rarely disappointed by the results of my hard work”, and “When things don’t go the way I want them to, that makes me work even harder”. The Cronbach’s α for this scale is 0.87.

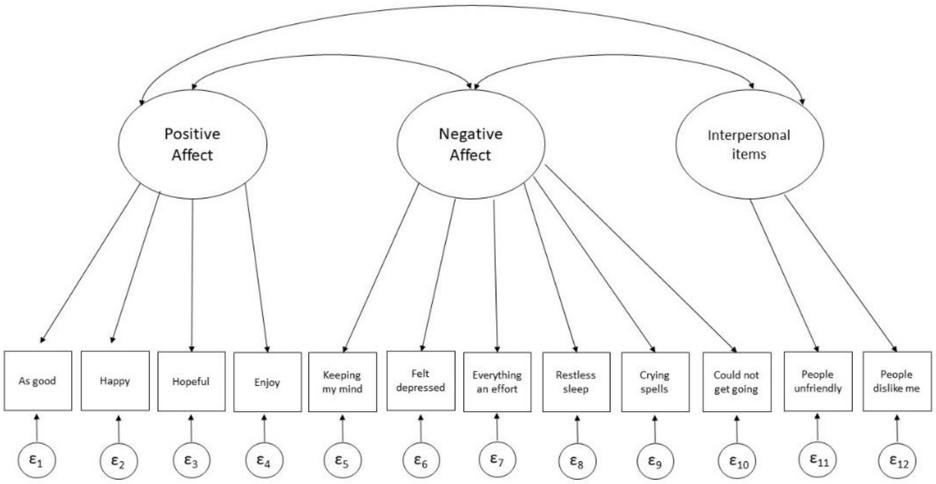
Sociodemographics : Sociodemographic variables included in this study included age, education (<high school, some college, college or graduate/professional degree), insurance status (“Do you have any kind of coverage, including health insurance, prepaid plans such as HMOs or government plans such as Medicare ?”), marital status (currently married vs. unmarried), and employment status (employed full time or part time vs. unemployed). A table of control measures is listed in the appendices

Quantitative Analysis Plan for Aims 1 and 2

Data management and descriptive statistics were conducted in SPSS version 24. Analyses equation modeling analysis were conducted in MPlus version 8. For Aim 1, I reverse coded four items on the CES-D scale: “I felt I was just as good as other people”, “I felt hopeful about the future”, “I was happy”, and “I enjoyed life”. Reverse coding for these CES-D items were modeled such that higher scores indicate more depressive symptomatology. Univariate analyses were conducted for all study variables to determine normal distribution of responses. Means and frequencies were run for the CES-D scale, by item (12) and by the total score. I then conducted bivariate analysis of the CES-D items and total CES-D score.

For Aim 1, I first assessed a three-factor CFA model across the entire sample (n=683). Modification indices tests were examined to evaluate whether the CES-D displayed a factor structure similar to the three-factor solution reported by Assari & Mozaen-Zadeh (2016). Tests for MI were conducted using Mplus version 8 (Muthén, (1998-2007)) with theta parameterization and robust weighted least squares estimation (WLSMV estimation), and methods recommended by Millsap and Yun-Tein (2004) for binary outcomes. Model fit was determined by goodness of fit indices including the chi-square, comparative fit index (CFI), Tucker-Lewis index (TLI) root-mean square error of approximation (RMSEA), and modification indices. Determination of acceptable model fit indices and cut-off values for the fit indices selected were based on criteria primarily specified by Hu and Bentler (1999). In particular, the authors recommended that acceptable values for model fit indices include: RMSEA ≤0.08, CFI ≥ 0.95, and TLI ≥ 0.95. The hypothesized measurement model is illustrated in Figure 4.2.

Figure 4.2: Hypothesized Measurement Model (Aim 1)



For Aim 2, I assessed which of the confirmed factors (e.g. depressed affect, positive affect, and interpersonal conflict) in my measurement model (Aim 1) were most important for USOC acquisition. First, I estimated the structural model without moderating terms to determine the direct effect of depressive symptomatology on USOC status (Figure 4.2). Next, I estimated the structural model with moderators, which will be referred to, analytically, as latent interactions (Maslowsky, Jager, & Hemken, 2015). Each moderator was analyzed in the model as a single interaction term using the XWITH command in MPlus (Figure 4.3) and, if significant ($p<0.05$), was included in the final structural model. Model fit was assessed by the main effects model (Figure 4.2), and good fit was assessed by appropriate CFI, TLI, and RMSEA values as detailed in Aim 1.

Figure 4.3: Hypothesized Main Effects Model for Aim 2, Without Latent Variable Interaction (Aim 2a)

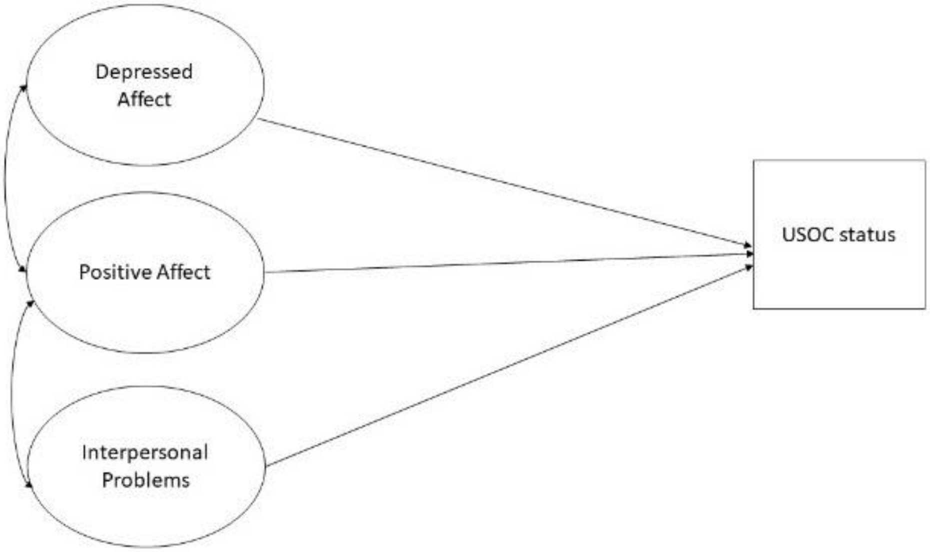
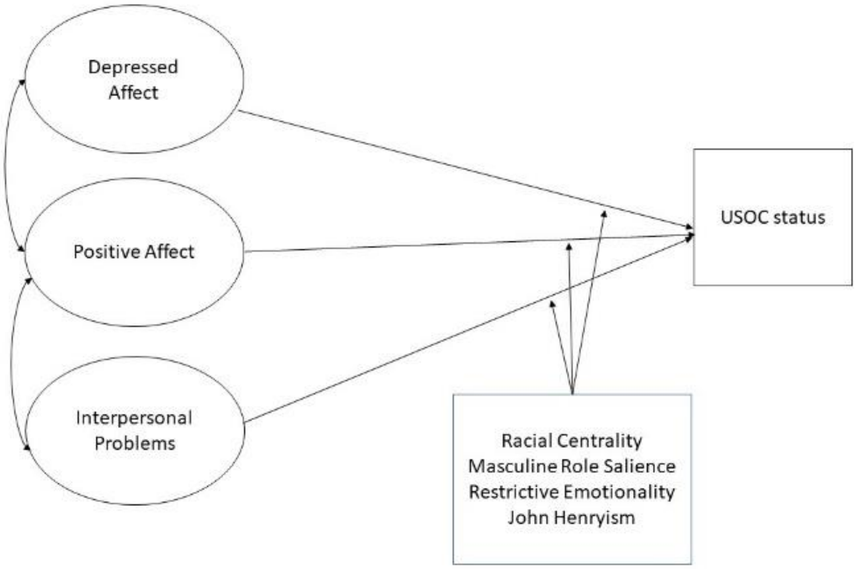


Figure 4.4: Hypothesized Latent Moderated Structural Model (Aim 2b)



Methods for Study Aim 3

Aim 3 explores conceptualizations of depressive symptomatology and its contribution to acquiring a USOC among Black men. For this aim, I used a community-engaged methodology, concept mapping. Concept mapping is a structured mixed-methods approach to understanding participants' views on a particular research topic (W. M. Trochim, 1989). The method consists of a qualitative research design and a quantitative analytic procedure to create a mixed-methods platform for visually illustrating participant ideas and conceptualizations. Specifically, I used concept mapping to generate conceptualizations of depressive symptomatology and health care engagement from the perspectives of Black men.

Community Advisory Board roles and responsibilities

An advisory committee of three stakeholders in Black men's health were convened elicit community perspectives throughout the research process. This Community Advisory Board (CAB) was comprised of two Black men and one Black female primary care provider residing in Durham, North Carolina. The CAB was selected based on their status as advocates for Black men’s health, ability to participate in periodic meetings to discuss study progress, and ability to disseminate findings from this study to broader stakeholder networks. The CAB contributed to the study development prior to the initiation of Aim 3 by assisting with refinement of the focal question, brainstorming recruitment strategies, and reviewing study materials for clarity in the lay population. Once the study launched, the CAB assisted with recruitment efforts, helped refine brainstormed items, and participated in the interpretation session at the conclusion of the study. CAB members also helped refine action-oriented strategies for dissemination to key stakeholders in academic, government, and community settings.

Recruitment of participants for concept mapping

Between October 2017 to January 2018, I recruited a non-random purposive sample of approximately 36 individuals residing in the Triangle area of North Carolina. Purposive sampling is the preferred sampling frame for concept mapping to achieve heterogeneity in the reflected items generated from participants. As described by Kane and Trochim, ‘the idea is to nonrandomly select a broad range of persons who are likely to reflect the full spectrum of ideas that are relevant for the concept mapping process” (2007). As such, Black men, women, and primary care providers were recruited for participation in various phases of the study. Black women were also targeted as part of the brainstorming population due to their unique role as facilitators to the healthcare engagement of Black men. Studies also show that Black women are uniquely situated to recognize varied presentations of major depressive disorder among their male counterparts in romantic and family-centered relationships (Blocker et al., 2006; D. C. Watkins, Abelson, & Jefferson, 2013). The goal for including providers in the brainstorming activity was to bring clinical perspectives about depressive symptomatology into the conceptualization process. Inclusion of clinicians may also bring to the fore valuable information about patient-provider relationships with Black men.

There were differential recruitment engagement strategies for each stakeholder group. Black men and women were recruited through targeted flyers through community organizations and listservs of interest (e.g. fraternities, male-centered organizations, etc.). In particular, both stakeholder groups were recruited through academic and community-based networks to drive a diverse range of participants. After the first round of recruitment, Black men and women were also recruited using direct email interaction and snowball sampling from previous participants. Primary care providers were recruited using direct contacts from CAB members and the recruitment services support team at the North Carolina Translational and Clinical Sciences Institute (NC TraCS).

The eligibility criteria to participate in the study was as follows: (1) self-identifies as a Black man, woman or primary care provider, (2) is 18 years or older, (3) resides in the Triangle area of North Carolina (e.g. Chapel Hill, Durham, Raleigh), (4) speaks English, and (5) was able to attend at least 2 out of the 3 proposed concept mapping activities (see data collection procedures below). In addition to the recruitment strategies described above, potential participants were also identified by the Community Advisory Board (Appendix A).

Data collection procedures

Data collection was divided into three, in-person activities, (1) brainstorming, (2) sorting and rating, and (3) interpretation. Each session was conducted separately over the course of several weeks to highlight the importance of each activity in the concept mapping process. During the first group session, participants completed a brief survey on demographic information and assessment of depressive symptoms (CES-D). Also, in this first session, participants were provided descriptions of the terms “major depressive disorder”, “depressive symptoms”, “usual source of care”, and “preventive health services” to ensure that all participants understand the terminology and were similarly oriented to the focus of the study.

As the first phase of concept mapping, participants engaged in **Brainstorming**. Participants were placed in groups and asked to brainstorm or “free list” ideas related to the focal question: “What are distinct characteristics of depression among Black men?”. Discussions centered on generating responses to the focal question and were guided by open ended probes related to the study topic with the goal of generating a large list of items from the participants. The moderator’s guide for the brainstorming session is included in Appendix D. Concept mapping brainstorming sessions were audio-recorded. In addition, detailed notes of the discussion were taken at each session by research staff. After the brainstorming session, I reviewed all the generated items, removed duplicates, and distilled connected ideas to create one master list of items for the next session with participants, sorting and rating. This refinement process is described further in the Concept Mapping analysis section below.

In the second phase of concept mapping, **Sorting and rating**, participants placed the distilled, synthesized items into labeled piles based on their perceptions of conceptual similarity. Participants labeled piles independently based on how they perceived the items related to each other. Following the sorting process, participants were asked to rate the items according to various pathways of healthcare engagement, including preventive (e.g. primary care physician or USOC), specialty (e.g. psychiatrist, psychologist), and non-clinical (e.g. friends, family, etc.) pathways. Data collected during the sorting phase was used to create point maps and cluster maps in the analytic process. Participants rated each generated statement on a scale of importance, with 1 being the least important thing influencing use of a USOC among Black men and 5 being the most important, relative to other items. These ratings were used in the analytic process to create pattern matches and cluster rating maps. The moderator’s guide and forms related to sorting and rating sessions are included in Appendix G and E.

The final participatory phase, **interpretation**, occurred after initial concept mapping analysis was completed. In this phase, select members of the brainstorming and sorting/rating phase came together to review concept mapping analytic output and confirm the appropriate cluster solution that best represents the conceptual domains of the study. Participants for the interpretation session were selected based on stakeholder input. The goal was to interpret the analytic output with participants and discuss participant interpretations of the results. In addition, interpretation participants worked together to label each conceptual cluster identified by the cluster maps and discuss implications of the cluster rating maps and pattern matches for future action-oriented research. Study participants received monetary compensation for their involvement in Aim 3 concept mapping activities (up to $60 for participation in all phases).

All concept mapping activities were conducted in-person over the span of three months between Fall 2017 and Winter 2018. Concept mapping sessions were conducted in community-based settings in the Triangle area (e.g. libraries, barbershops, community spaces, etc.).

Concept mapping analysis

The analysis phase of concept mapping integrates the qualitative input with quantitative analytic techniques to yield a visual representation of participant responses. Data analysis for Aim 3 was conducted using Concept Systems Global Max software. Analysis involves several steps. First, prior to inputting items into the software, items generated through the brainstorming phases were distilled into statements that succinctly answer the focal question based on participant responses. The purpose of this process in the analytic phase was to remove redundant statements and create items that are easily discernable for participants in the subsequent phases of the study (e.g. rating and sorting). The distillation process was conducted in coordination with the CAB (Appendix A) in Fall 2017. CAB members added further insight as to how each brainstormed statement could be succinctly described for subsequent phases of the concept mapping process.

Data derived from the concept mapping activities were analyzed in three main phases. First, I assessed descriptive statistics of participant demographic surveys to describe characteristics of participating individuals (Appendix C). In the second phase, I used brainstorming and sorting data to create a point map, which represented each of the generated statements on a graph. The point map was derived from multidimensional scaling (MDS) techniques to aggregate statements from the sorting exercise. Points that were closer in proximity to each other in relation to how often participants grouped these statements together during the sorting phase. The diagnostic test of fit was determined using a stress index output. The stress index estimates the overall degree to which distance on the map (output) are discrepant from the sorting data (input). The normative range for judging stress values within any given study is between 0.155 to 0.352, with an average stress value of 0.285 (Trochim, 1993). The generated point map served as the foundation for other visual outputs created in the analytical process.

From the initial point map, a cluster map was generated by grouping point map statements into meaningful conceptual clusters. This phase of analysis uses hierarchical cluster analysis (HCA), using Ward's algorithm (Kane & Trochim, 2007), to partition the MDS configuration into non-overlapping clusters of conceptual similarity. The maximum number of clusters was generated using Concept Systems software and was subsequently paired down to a meaningful cluster solution following the in-person interpretation section. Each cluster label reflects common themes of the statements in that particular cluster.

Following the three-phase analytic process, I used rating data to generate a series of comparative outputs: pattern matching and cluster rating maps. For this aim, I analyzed the first rating question (“How important is [brainstormed item] on Black men’s use of a usual source of care?”). Pattern matching illustrates a statistical and graphic analysis of the importance of each cluster by stakeholder groups (e.g. Black men, primary care providers, etc.) or demographic characteristics (e.g. age, CES-D scores, USOC status etc.). A pattern match is illustrated using a “ladder graph” that consists of two vertical axes, which are joined by lines representing the average value for each cluster. A Pearson correlation was generated to examine strength of relationship between cluster domains in each stakeholder group. A cluster rating map examines a single cluster in more detail by using rating data. Each cluster is visually stacked, such that the higher the stack, the higher the average rating is for that particular cluster. This output illustrates generated items that are strongly related to each cluster and show via visual representation how important each cluster is in relation to one another. As described above, these outputs and visual representations were used to determine the conceptual domains that describe Black men’s depression and its unique importance for USOC acquisition.

Human subjects and research ethics

This dissertation study uses a mixed methods approach that includes both secondary data analysis (Aims 1 and 2) and primary data collection and analysis (Aim 3). Data collection and analysis for Aims 1 and 2 was approved by The University of North Carolina Institutional Review Board (IRB). Ethical approval for Aim 3 was approved and exempt from the UNC IRB (IRB #17-1970) prior to the start of the study.

CHAPTER 5: EXPLORATORY AND CONFIRMATORY ANALYSIS OF THE 12-ITEM CES-D SCALE IN A COMMUNITY SAMPLE OF BLACK MEN (AIM 1)

Introduction

The Center for Epidemiological Studies Depression Scale (CES-D) is one of the most widely-used measures used to assess depression in population-based research (Radloff, 1977). The psychometric properties of the CES-D have been assessed through exploratory and confirmatory factor analysis and results confirm the presence of four latent factors: depressed affect, positive affect, somatic symptoms, and interpersonal problems (Radloff, 1977). Since its inception and first use in the 1970's, the CES-D has been found to have high internal consistency and subsequently recommended for use in different racial and ethnic groups, including Black Americans (Perreira et al., 2005; Roberts, 1980). However, in recent years, scholars seeking to replicate the CES-D's four-factor structure have produced inconsistent findings that raise questions about its fit for diverse populations (Hertzog et al., 1990; Kim et al., 2009; Kim et al., 2011; Makambi et al., 2009; Posner et al., 2001; Roberts, 1980).

To date, extant literature examining the CES-D factor structure among Black Americans have yielded mixed results. Exploratory factor analysis (EFA) studies conducted in this population generally confirm the presence of four latent CES-D factors among older populations. However, the individuals examined in these studies have generally been older or predominately female (Long Foley, Reed, Mutran, & DeVellis, 2002; McCallion & Kolomer, 2000). Although these studies confirmed four factors, there were differential item loadings for those factors compared to the original CES-D classification. For instance, Foley and colleagues found an ambiguous fourth factor, entitled "social wellbeing", which captured a diverse range of positive affect and somatization symptoms (Long Foley et al., 2002). CFA studies also largely confirm a four-factor structure among subpopulations of Black Americans, such as the community-dwelling elderly, dementia caregivers, adolescent girls, low SES, and Black women (Blazer, Landerman, Hays, Simonsick, & Saunders, 1998; Flynn Longmire & Knight, 2010; Hales et al., 2006; Nguyen et al., 2004; Roth, Ackerman, Okonkwo, & Burgio, 2008; C. D. Williams et al., 2007). Notably, studies investigating CES-D factor structure and measurement invariance among Black Americans do not provide conclusive evidence for preferred factor structure by race and gender.

Few studies examine the CES-D factor structure among Black men, who compared to their White male counterparts, experience prolonged severity and chronicity associated with depressive symptoms, higher rates of premature mortality, and alarmingly increased rates of suicidal behavior among youth (Bridge et al., 2015; Wadsworth, Kubrin, & Herting, 2014; E. Ward & Mengesha, 2013; Williams, 2003). Differences in depressive symptom presentation among Black men may be further exacerbated by strongly held gendered perceptions that associate this condition with weakness and vulnerability and discourage help-seeking behavior (W. P. Hammond, Matthews, et al., 2010b; W. P. Hammond et al., 2011). Further investigation of the CES-D factor structure in a community-driven sample of Black men is warranted to verify its underlying latent factors and determine appropriate therapeutic approaches to addressing unique symptomatology in this vulnerable population.

Despite the growing evidence highlighting the unique manifestations of Black male depression, few studies draw definitive support for Radloff' s original classification. Cole et al. (2000) noted potential gender-bias related to endorsing the “crying” item, such that Black men were less likely to endorse this item in comparison to other CES-D scale items. Authors of previous studies also noted a comparative difference in CES-D item response to interpersonal items between Black and White respondents (e.g. people were unfriendly) and positive affect (e.g. I feel happy) (Assari & Moazen-Zadeh, 2016; Love & Love, 2006). Moreover, Torres (2012) recommended dropping two items ("I felt like everything I did was an effort" and "I felt that I was just as good as other people") due to poor reliability among African American and Black Caribbean men. Taken together, these findings underscore the importance of adequately capturing depressive symptom presentation to improve population-based efforts aimed at improving mental wellbeing.

With some notable exceptions, heterogenous expressions of Black male depression, as characterized by the CES-D, remain largely unexplored. An EFA study conducted by Callahan & Wolinksky (1994) found considerable variation in Radloff' s original CES-D classification among Black male patients compared to other race-gender groups in the primary care setting. This study determined seven underlying CES-D factors and introduced emerging factors (anxiety, introspection, and crying) that are not currently reflected in factor analysis literature. Another EFA study by Love and Love (2006) found three emerging factors in a sample of older Black men residing in Harlem, with the depressive and somatic factors merging into a single dimension of depression among Black men. Finally, although Long Foley's (2002) previous validation of the CES-D scale presented disaggregated results by race and gender, the authors did not conduct a factor analysis. These authors all independently concluded by recommending future research on examining depression dimensionality in varying race-gender groups, particularly Black men, to determine the extent to which sociocultural differences influence CES-D item function and expression of depressive symptomatology. This manuscript addresses the previously noted gap by understanding the adequacy of the CES-D measure in a community-based sample of Black men.

Since the original 20-item scale was created, the CES-D scale has been abbreviated to a 12-item scale to more efficiently capture depressive symptom structures and reduce respondent burden across diverse populations (Assari & Moazen-Zadeh, 2016; Kim et al., 2011; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993; Zauszniewski, Bekhet, & Suresky, 2009). This 12-item scale has been found to be similar to the original 20 item CES-D scale and validated in a single study using nationally-representative sample of Black men (Torres, 2012). This study assessed psychometric properties of the CES-D in a sample of African Americans and Black Caribbean men and women and found variability by ethnicity and gender. In particular, CES-D construct validity as it relates to major depressive disorder was found only in African American men, but not Black Caribbean men. Since then, few studies have confirmed the validity of the abbreviated 12-item CES-D scale in an exclusively Black male sample. Comprehensive use of the shortened CES-D scale is not only valuable for population-based studies but important for clinical settings to assess diagnostic predictability of the scale in comparison with the DSM-V criteria for depression. Assessing factor structure among a larger, community-based sample of socioeconomically diverse Black men will provide broader insights of depressive presentation among men of diverse racial and ethnic backgrounds.

The current study assesses the dimensional structure of the 12-item CES-D scale using both exploratory and confirmatory factor analysis among a community sample of Black men. We first conducted an EFA to examine dimensional structure and allow for openly guided evaluation of item loading and factor structure. Second, using the EFA-implied factor structure, we confirmed the retained structure using a confirmatory approach. CFA findings were also compared with previous factor analysis literature that proposed alternate factor structures among Black men (Callahan & Wolinsky, 1994; Love & Love, 2006). Guided by previous studies, we hypothesized that depressive symptoms, measured through the CES-D by clustered along three correlated factors: positive affect, negative affect, and interpersonal problems. This investigation addresses evidentiary gaps regarding depression factor structure among Black men and strengthens existing research validating the CES-D 12-item scale among diverse populations.

Methods

Data source

We used data from the African American Men's Health and Social Life Study (AAMHSL: 2007-2011). The goal of the AAMHSL study was to assess a range of attitudes, behaviors, and health status of Black men residing in the United States. The questionnaire assessed men's early life health care experiences, religious/spiritual values, experiences with daily stress (general and race-related), gender norms, and current healthcare utilization practices. Convenience sampling methods were used in the AAMHSL to recruit a sample of Black men from various academic and community settings. Most participants (80.7%) were recruited from barbershops in Michigan and Georgia. The remainder of the study participants (19.3%) were recruited from academic institutions and events, which included a conference for African American men sponsored by a professional labor association. The academic institution was a community college located in Southeastern Michigan, and a historically Black university (HBU) in central North Carolina. Fifty percent of the community college population was male and 22% were ethnic minorities. The HBU student population was 77% African American and 33% male.

Black men age 18 and older were recruited through a variety of means, including flier advertisements, direct contact, word-of-mouth, specially advertised data collection events, and e-mail solicitation. Men who expressed interest in the survey were directed to study personnel.

Before the study proceeded, informed consent was obtained through verbal and written documentation, and the anonymous self-administered survey was administered (Hammond, et al., 2010; Matthews, Hammond, Nuru-Jeter, Cole-Lewis, & Melvin, 2012).

Procedures

Barbershops with a high customer volume were prioritized as recruitment sites because they typically had long wait times which minimized the amount of additional time required to complete the questionnaire by study participants, and because barbershops have previously been shown as being patronized by a socioeconomically diverse group of Black men (Hart Jr & Bowen, 2004). Initial contact with barbershops was made in-person or by telephone by study personnel. Upon agreeing to participate and facilitate recruitment, barbershop owners completed consent forms. Barbers or receptionists, not study personnel, invited men to complete the questionnaire based on previous empirical support positioning these individuals as trusted community stakeholders and integral to community-engaged research in Black communities (Cowart, Brown, & Biro, 2004; W. P. Hammond, Matthews, & Corbie-Smith, 2010; Releford, Frencher Jr, & Yancey, 2010). Men provided verbal and written consent at the beginning of the study and those who completed the questionnaire received a voucher for a free haircut, valued at $25. As an incentive for their participation in the study, the barbershop retained any unused value of the voucher. In addition to barbershops, participants were recruited from two academic settings, one historically Black and the other predominantly White. Recruitment methods were similar at these sites, with the exception that study personnel recruited Black men directly rather than barbershop staff. Study participants were also encouraged to spread the word about the research team's presence and invite their Black male friends to complete a questionnaire. The research team solicited study participation in high-traffic areas such as the student union or eating areas at academic institutions. Participants recruited at these sites also received a $25 gift card. All study procedures were reviewed and approved by the Institutional Review Board at The University of North Carolina at Chapel Hill.

Measures

Depressive Symptomatology (CES-D, 12-item)

Depressive Symptomatology was measured using the 12-item version of the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). Possible scores ranged from 0 to 36, with higher scores indicating more depressive symptomatology. Categorical response variables for each item ranged from 0 (Rarely or none of the time) to 3 (Most or all of the time). Items that reflected more positive mood (e.g. “I was happy”) were reverse coded to reflect higher depressive symptomatology.

Demographics

Demographic characteristics measured in this analysis included age, measured continuously, education status (e.g. some high school to graduate and professional school) and employment status (e.g. full-time, part-time, student, or unemployed).

Analysis

Data management and descriptive statistics were conducted in SPSS version 24. Exploratory and confirmatory factor analyses were conducted in MPlus version 8. Four positive affect CES-D items were reversed coded to reflect higher scores and more depressive symptomatology. Univariate analyses were conducted for all study variables to determine normal distribution of responses. Means, frequencies, and were run for the CES-D scale, by item. Bivariate analysis of the CES-D items and total CES-D score were also conducted to determine inter-item and item-to-total correlations. The full AAMHSL dataset (n=683) was randomly split into two halves to conduct each factor analyses.

Due to inconsistent factor structure findings and limited investigations among Black male populations, an EFA was first conducted to establish a recommended factor structure that would be tested in the confirmatory phase of the analysis. This procedure, suggested by Kim et al.'s (2011) systematic review, establishes additional support for the CES-D factor structure by race and gender. First, the EFA was conducted on the first half of the randomly split sample using an oblique, varimax rotation. We determined the appropriate number of factors to retain the criteria described by DeVellis (2016), which includes evaluation of the scree plot and eigenvalues greater than one. Higher factor loadings for each CES-D item were used to signal the primary factor where the item would be loaded.

Second, we conducted the CFA using the remaining randomly split sample (n=362). We confirmed the fit of the retained EFA model as well as the previously identified three-factor structure that is recommended in the literature (Assari & Moazen-Zadeh, 2016). We assessed model fit using a weighted least square estimator (WLSMV) to account for the categorical nature of the CES-D scale. Model fit was determined by goodness of fit indices including the chi-square, comparative fit index (CFI), Tucker-Lewis index (TLI) root-mean square error of approximation (RMSEA), and modification indices. Determination of acceptable model fit indices and cut-off values for the fit indices selected were based on criteria primarily specified by Hu and Bentler (1999). In particular, the authors recommended that acceptable values for model fit indices include: RMSEA ≤ 0.08, CFI ≤ 0.95, and TLI ≤ 0.95.

Results

Descriptive statistics

Table 5.1 illustrates the descriptive characteristics of AAMHSL study participants (n=683). Overall, the mean age was 32 years old, with a range between 18 to 79 years old. Most participants received a high school education or greater and were employed full-time. The average CES-D score was 11.18, with a range between 0-25 on the 12-item CES-D scale. Descriptive analysis, including means, standard deviations, and item-to-total correlations for each CES-D item are shown in Table 5.2. Three items had item-to-total correlations below 0.30: “I felt that everything I did was an effort” (0.035), “I felt that I was just as good as other people” (0.273), and “I felt hopeful about the future” (0.219). Internal consistency for the full 12-item CES-D scale was 0.78. 55.8% of respondents scored a 10 or higher on the scale, which was previously determined to be the cut-off score for potential depression and additional screening. Responses were skewed towards low to moderate depressive symptomatology such that men were more likely to report symptomatology reflecting scores between 0 and 2 on the four-point Likert scale (e.g. reporting symptoms rarely, some of the time, or occasionally).

EFA results

The EFA on the randomly split first half (n=341) of the AMHSL dataset yielded two emerging factors that best represented the underlying factor of depression. Results from the scree plot (Figure 5.1) suggested the retention of two factors with eigenvalues greater than 1.0. These two factors accounted for 57.2% of the total variance. The first factor, which included eight CES-D items, reflected items related to negative affect, depressed mood, and interpersonal challenges. These items accounted for 39% of the variance in the model (Eigenvalue=4.680). This factor is represented as *interpersonal negative affect (INA)*. Secondly, four CES-D items related to positive affect accounted for 18.2% of the variance (Eigenvalue=2.190). This factor is represented as *diminished positive affect (DPA)* affect. Table 5.3 displays the factor loadings for the proposed two-factor structure of the 12-item CES-D scale. Of note, the “effort” item demonstrated the poorest overall factor loading and significant loading values on both the INA and DP factors. For the confirmatory models, we tested two CFA models with the “effort” item loaded onto the INA factor only (Model 1) and cross-loaded onto the INA and DP factors (Model 2).

CFA results and factor loading

Table 5.4 summarizes model fit indices of the CES-D items in the second split half of the AAMHSL dataset (n=342). Based on the EFA results, I first tested two-factor CFA models to determine model fit. Model 1 reflected eight items loaded onto the INA factor and four items loaded onto the DPA factor. This model demonstrated poor fit (WLMSV x^2=209.627, TFI=0.919, CFI=0.935, RMSEA=0.090). Next, Model 2 illustrates the fit of a two-factor solution with the "effort" item cross-loaded on both INA and DPA factors. This secondary model yielded approved fit for the 12-item, two-factor structure (WLMSV x^2=123.368, TLI=0.962, CFI= 0.970, RMSEA=0.061). Model 3 reflected an 11-item CES-D scale with the "effort" item removed. Analysis of this model was prompted by poor item-to-total correlations and weak factor loadings for the "effort" item from the EFA analysis. This model demonstrated improved model fit compared to Models 1 and 2 (WLMSV x^2=165.583, TLI=0.967, CFI= 0.974, RMSEA=0.065). Finally, Model 4 tested the hypothesized three-factor confirmatory structure, which suggested the 12 items load as six negative factors, four positive factors, and two interpersonal factors. This model yielded poor fit (WLMSV x^2= 207.687, TLI=0.916, CFI= 0.935, RMSEA=0.092). TFI=0.919, CFI=0.935, RMSEA=0.090). Thus, Model 3, which is an 11-item measure with the "effort" item removed, provided the best fit overall in our study sample.

Figure 5.2 illustrates the final two-factor model of the 11-item CES-D with the "effort" item removed from the overall measure. Standardized factor loadings were all statistically significant at $p<0.001$ and ranged between 0.538 ("hope" on the DPA factor) and 0.877 ("crying" on INA factor). The interpersonal negative affect factor was comprised of seven items with factor loadings ranging from 0.563-0.877 and the positive factor was comprised of four items with factor loading ranging from 0.538-0.867. The results of the intercorrelated model CFA also showed a significant negative correlation between the INA and DP factors (0.448, $p<0.001$).

Discussion

The current study builds on previous literature examining the dimensional structure of the CES-D scale by testing both an EFA and CFA in a community-based sample of Black men. Contrary to our hypothesis, a two-factor model comprising the latent variables of interpersonal negative affect and diminished positive affect had the best fit compared to the three-factor model found in past classifications (Assari & Moazen-Zadeh, 2016; Love & Love, 2006). Results from our study are also partially consistent with reliability and correlation estimates for the 12-item CES-D conducted in a nationally representative sample of African American and Caribbean men by Elisa Torres (2012). Specifically, our study confirms low endorsement of “good” and “effort” CES-D items among Black men as reflected by low item-to-total correlations below 0.30. Contrary to the Torres article, our study also revealed low item-to-total correlations for the “hope” item. Future research should examine how these divergent pathways of symptomatology impact health outcomes among community-dwelling Black men.

EFA results from the split-half random sample of the AAMHSL study revealed two emergent factors associated with depressive symptomatology. These findings diverge from two previous studies using an exploratory approach among older Black males (Callahan & Wolinsky, 1994; Love & Love, 2006). In our study, the hypothesized depressed affect and interpersonal problems factors merged into a single factor reflecting both constructs. This specified structure was confirmed to have the best fit in the CFA of the 11-item scale in comparison to a priori three-factor model structure present in extant literature (Assari & Moazen-Zadeh, 2016).

Collectively, these findings provide additional support that Black men in community-based settings experience depressive symptomatology that is distinct in comparison to their male counterparts in the clinical setting.

Additionally, although we found acceptable internal consistency of the measure in our study (Cronbach's alpha: 0.78), we note that our score is notably lower than extant research conducted in Black male populations (Callahan & Wolinsky, 1994; Long Foley et al., 2002; Love & Love, 2006). Thus, we present additional rationale to explain the marginally inferior performance of the 12-item scale in the AAMHSL sample. First, it is possible that these variations reflect true differences in depressive symptoms among Black men. This justification is possible, given the numerous risk factors that may negatively shape the experience of depressive symptoms for Black men, including economic strain, age, and racial discrimination, to name a few (Daphne C Watkins, Green, Rivers, & Rowell, 2006). Another potential explanation is the degree of measurement invariance present among Black men by age, recruitment setting (e.g. clinic vs. community), and country of origin. To date, there is no evidence available to suggest that invariance is present in the pathways suggested. However, differences in psychometric properties have been described in a single previous study that provide support for exploration at the factor level (Torres, 2012). Finally, our reported Cronbach's alpha may be explained, in part, by the notion that Black men assign differential meaning to specific items on the scale. For instance, perceptions of effort may differ based on life experiences, socioeconomic position, and lead to more varied responses for the "effort" time in the current scale. Future research aimed at parsing out the depressive symptom experience should not only examine invariance across a diverse sample of Black men, but also incorporate theoretical framing of hypothesized item loadings that will inform additional refinement of the original Radloff classification.

Findings from our factor analysis also provide an opportunity to revisit the generalizability of the CES-D across demographic groups. As Radloff noted in his original conclusions, group differences in factor loadings imply that the CES-D does not capture the experience of depression similarly (Radloff, 1977). In light of our findings, we argue that the CES-D scale should not be used as a mechanism to prioritize mental health promotion among populations that are more responsive to the measure. Instead, researchers should interpret these differences as a function of the diverse lens in which individuals recognize and experience depression-related sequelae. For Black men, our results may be more reflective of the divergent pathways in which Black men perceive and express emotion-focused problems, such as depression, due to prevailing societal norms associated with race and gender. Black men's unique perspectives on society are informed by both their masculine role norms salience (e.g. expressing vulnerability is a weakness) and racial identity (e.g. Black identity as an important sense of self) (Banks & Kohn-Wood, 2007; W. P. Hammond, 2012; Powell et al., 2016; Sellers et al., 2006). These unique lived experiences may result in careful disclosure of emotion-focused symptomatology, perceptions of effort, and optimism. As a result, researchers should consider these identity-level factors, among others, and the ways in which they conjointly influence endorsement of depressive symptomatology assessed by the CES-D.

Based on the results from the current study, we recommend eliminating the item "I felt like everything I did was an effort" in Black men resulting in 11 items in the CES-D. The decision to omit this item was due to the poor item-to-total correlations, complex factor loadings in both INA and DPA factors, and the improved overall reliability of the 11-item measure. Additional rationales should also be considered to explain the "effort" item as a factorially complex construct in the CES-D scale. Our study found that this item may simultaneously reflect both diminished positive affect and interpersonal negative affect was demonstrated by cross-loaded factor loadings in the exploratory analysis. Collectively, these findings suggest that single item measures of effort may not fully capture how constant strain of the Black male lived experience influences depressed affect. Scholars point to more descriptive measures of effort, such as John Henryism, which is characterized as an “individual’s self-perception that he can meet the demands of his environment through hard work and determination” (Sherman A James, 1994; James, Hartnett, & Kalsbeek, 1983). This high-effort and active coping style has been described as the belief that hard work and persistent effort will allow Black men to overcome the demands of their environment. Our findings, coupled with extant literature, suggest that perceptions of effort may be indicative of a more complex psychosocial experience and, thus, may be more sensitive to the varying contexts in which Black men live, work, and play. This assertion warrants further investigations in exclusively Black male samples to determine the extent to which perceived effort is reflective of a more comprehensive and dynamic construct for depressed Black men.

There are limitations that may influence the interpretation of our results. First, the use of the 12-item CES-D scale excludes symptomatology related to broader somatic changes (e.g., weight gain, appetite change) that is reflected in the original 20-item scale. Studies show that Black Americans may report more somatic complaints related to depression in the clinical setting (Baker, Okwumabua, Philipose, & Wong, 1996). Yet, less is known regarding the role of somatization using population-based measures. Future studies are needed to extend findings to a the full CES-D measure to assess whether higher endorsement of somatic symptoms is evident in Black male samples. In addition, the community-based sampling approach yielded a subset of Black men that were relatively young, had obtained a high school degree or higher, and were employed. Demographics were most likely driven by the type of settings that were frequented during the data collection period, such as barbershops and HBCUs. The demographic composition of our study may have also contributed to the presence of high depressive symptomatology above the CES-D cutoff score of 10 that was found in over half of our sample as well as the high CES-D mean score. In fact, studies have shown that young and single Black men are at greater risk for depression due to limited social support systems among peers or romantic relationships (Jones-Webb & Snowden, 1993; Neighbors & Howard, 1987). Future studies should explore the presence of measurement invariance of the CES-D across these key demographic factors to examine sociocultural differences in symptomatology.

Despite these limitations, this study is the first to our knowledge to explore and confirm the factor structure of the CES-D using a community-based sample of Black men. Although there is large body of evidence that examines depression among African Americans, this study builds on the hypothesized factor structure of a widely used scale by introducing differences in item endorsement and dimensionality. Data collection procedures used in this study also highlight important points of interaction for future community-based research focused on Black men. A noted strength of this study, compared with previous factor analyses, is the use of locations that are culturally specific to the Black male community (e.g. barbershops and HBCUs) and trusted community partners (e.g. barbers) as a key point of interaction for the AAMHSL questionnaire. Extant literature highlights these points of interaction as important features of improving program implementation focused on physical health conditions (Cowart et al., 2004; Hart Jr & Bowen, 2004; Luque, Ross, & Gwede, 2014; Releford et al., 2010). Yet, the impact of this outreach strategy has not yet been extensively applied to community-based research in the mental health field. This study highlights an opportunity for meaningful inclusion of trusted community liaisons as partners in creating therapeutic landscapes where Black men live, work, and play. Future studies should consider similar engagement strategies as detailed in this study as a launching point for creating effective mental health promotion efforts.

The study adds to the limited knowledge that currently exists examining depression dimensionality among community-dwelling Black men. The original intent for the CES-D scale was to capture depressive symptom levels that exist in the general population (Radloff, 1977). Thus, results provide important insights as to how Black men may exhibit and endorse particular depressive symptoms outside of the clinical setting. Given that Black men seek health services for mental health issues at lower rates of than the general population, capturing depressive symptomatology using community-based measures is of added importance for future interventions aimed at establishing trusted resources to care-seeking in the health care system. Moreover, as Radloff stated in the original study (1977), “To compare results from one subgroup to another, the scale must be shown to measure the same thing in both groups.” Given the divergent features of factor loadings and structure found in our study, we assert that the CES-D scale should not be used for comparison across demographic groups in large-scale epidemiologic studies.

Another intended use of the CES-D scale was to study relationships between depression and other variables impacting health outcomes (Radloff, 1977). Accordingly, these findings present an opportunity to extend our understanding of Black men’s depression to identify drivers of known health disparities in this population, such as diabetes, obesity, and substance abuse (Hawkins, Watkins, Bonner, & Thompson, 2016; Lustman et al., 2000; Melin, Thunander, Svensson, Landin-Olsson, & Thulesius, 2013). Interventionists incorporating this research should address relationships between depressive symptom factors and deleterious health behaviors in order to develop preventive strategies for disease prevention. This recommendation is a departure from current efforts to address depression using an exclusively medicalized approach geared towards clinical settings (McLaughlin, 2011). To this end, increased collaborations between mental health providers and public health professionals are needed to shift the trajectory of depression research towards a prevention framework. Collectively, these strategies present uncharted opportunities for reshaping mental wellbeing for community-dwelling Black men.

Tables and Figures

Table 5.1: Descriptive Statistics of AAMHSL Study Participants (n=683)

Variable	Frequency (%) or Mean [SE]
Age, mean [SE]	32.17 [0.43]
Min, max	18,79
Education, n (%)	
Less than high school	25 (3.7)
High School	192 (28.1)
Some College	225 (32.9)
College degree	127 (18.6)
Graduate or professional degree	55 (8)
Employment Status, n (%)	
Full-time	408 (60)
Part-time	78 (11.5)
Unemployed	122 (17.9)
Student	72 (10.6)
Mean CES-D score, [SE]	11.18 [0.24]
Min/max	0,25

Table 5.2: Sample Mean, Item-to-Total Correlations, and Response Distributions for AAMHSL Participants (n=683)

CES- D item	**Abbreviation**	**Mean Score**	**Std. Deviation**	**Item-Total Correlation**	**Response categories (%)**			
					Rarely (<1 day)	**Some of the time (1-2 days)**	**Occasionally (3-4 days)**	**Most of the time (5-7 days)**
I felt that I was just as good as other people*	Good	0.86	0.967	0.273	7.1	19.3	26.2	47.4
I had trouble keeping my mind on what I was doing	Mind	1.12	0.932	0.454	31.2	32.2	29.7	6.8
I felt depressed	Depress	0.80	0.920	0.676	49.2	29.0	17.0	5.8
I felt that everything I did was an effort	Effort	1.66	1.019	0.035	16.4	25.7	33.6	24.3
My sleep was restless	Restless	1.14	0.968	0.418	31.5	31.8	27.6	9.2
I was happy*	Happy	0.91	0.898	0.457	6.4	16.9	37.7	38.9
People were unfriendly	Unfriendly	1.09	0.927	0.487	30.6	38.4	22.7	8.3
I enjoyed life*	Enjoy	0.71	0.902	0.393	5.4	14.2	26.6	53.8
I had crying spell	Cry	0.54	0.894	0.612	69.0	12.9	13.5	4.6
I felt that people disliked me	Dislike	0.86	0.956	0.551	46.8	27.9	18.3	7.1

CES- D item	**Abbreviation**	**Mean Score**	**Std. Deviation**	**Item-Total Correlation**	**Response categories (%)**			
					Rarely (<1 day)	**Some of the time (1-2 days)**	**Occasionally (3-4 days)**	**Most of the time (5-7 days)**
I could not get going	Going	0.89	0.921	0.587	42.1	33.2	18.4	6.4
I felt hopeful about the future*	Hope	0.85	1.003	0.219	10.1	13.2	27.5	49.0

*Reverse coded to reflect higher depressive symptomatology

Table 5.3: EFA Factor Loadings in a Split-Half Sample of AAMHSL Participants (n=341)

CES-D items	**Factor 1**	**Factor 2**
Good		0.719
Mind	0.667	
Depress	0.776	
Effort	0.299	-0.468
Sleep	0.617	
Happy		0.762
Unfriendly	0.674	
Enjoy		0.751
Crying	0.757	
Dislike	0.692	
Going	0.740	
Hope		0.632

AAMHSL: African American Men’s Health and Social Life Study

Figure 5.1: Scree Plot

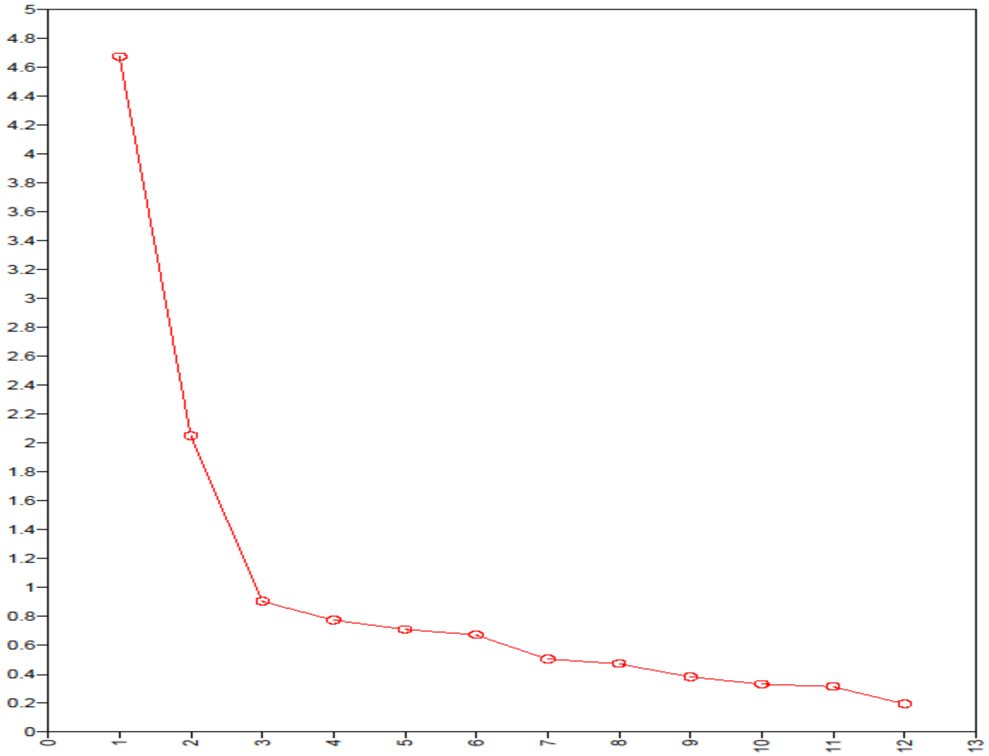


Table 5.4: Model Fit Indices on CFA Sample (n=342)

	Model	WLSMV x^2	df	p	TLI	CFI	RMSEA (90% CI)
1	Two-factors (effort loaded on one factor)	209.627	53	<0.001	0.919	0.935	0.090 (0.077-0.103)
2	Two-factors (effort loaded on both factors)	123.368	52	<0.001	0.962	0.970	0.061 (0.470-0.075)
3	Two-factors (effort item removed)	165.583	43	<0.001	0.967	0.974	0.065 (0.055-0.076)
4	Three-factors (hypothesized)	207.687	51	<0.001	0.916	0.935	0.092 (0.079-0.105)

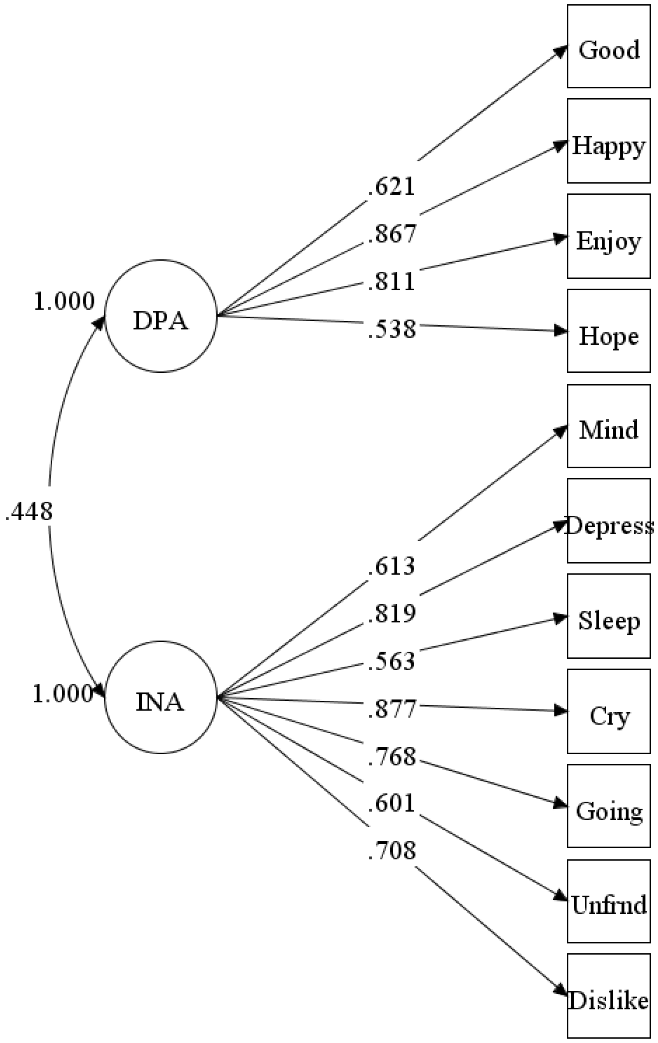
TLI: Tucker-Lewis Index

WLSMV: Weighted least squares mean estimator

CFI : Comparative Fit Index

RMSEA: Root-mean square error of approximation

Figure 5.2: CFA Factor Structure Model on Split-Half Sample (n=342)



DPA: Diminished positive affect

INA: Interpersonal negative affect

CHAPTER 6: DISENTANGLING DEPRESSION, PSYCHOSOCIAL FACTORS, AND HEALTH SERVICES AMONG BLACK MEN: A LATENT MODERATED STRUCTURAL EQUATION MODEL (AIM 2)

Introduction

In recent years, scholars have identified the far-reaching implications of mental health status on physical health outcomes, including diabetes, obesity, and substance abuse (Anderson, Freedland, Clouse, & Lustman, 2001; Compton, Conway, Stinson, & Grant, 2006; Lustman et al., 2000; Melin et al., 2013). In response, interventionists have focused on incorporating strategies to encourage mental wellbeing, which is characterized by the World Health (Organization, 2014) as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" . Despite the increasingly positive effects associated with mental health promotion interventions, there remains a scarcity of literature assessing the long-term implications of mental health on health services use in the general population (McLaughlin, 2011). This evidentiary gap is important to address in order to establish the ways in which disparate health outcomes persist as a result of infrequent contact with the health care system. In doing so, researchers can provide a stronger rationale for mental health promotion campaigns aimed at reducing the public health impact of chronic disease burden through sustained relationships in the health care system.

Current research assessing mental health status and indicators of health access is limited. For example, a single study conducted by Hibbard and colleagues (2007) found that depressive symptoms predicted diminished patient activation towards a variety of self-managed health behaviors, including establishing a regular health care provider. Such findings suggest that depressive symptoms influence the decisional pathway to USOC acquisition via breakdowns in the motivational processes related to medical help-seeking (Hibbard et al., 2007; Leaf et al., 1985; J. M. Thorpe et al., 2012). Despite the preceding evidence linking depressive symptoms and USOC acquisition, few studies assessing this association focus on Black men. One study by Hammond and colleagues (2011) specifically evaluated determinants of USOC for Black men and found that poor mental health status was associated with lower odds of reporting a USOC. However, the psychosocial mechanisms driving associations between depressive symptomatology and USOC among Black men remain unexplored. This manuscript addresses this gap by exploring the relationship between depression symptomatology, masculinity, and race on Black men's USOC acquisition.

Extant literature examining associations between depression, one of the most common mental health disorders, and health services use generally omits Black men from the analytic sample. Nationwide, prevalence estimates among Black men indicate that between 5 to 10% of Black men suffer from major depressive disorder (E. Ward & Mengesha, 2013). Another study found lifetime prevalence of major depressive disorder was lower among Black men, but higher chronicity and disability was associated with this group compared with Whites (56.5% vs. 38.6%, respectively) (D. R. Williams et al., 2007). Given the fact that Black men experience higher rates of premature mortality than the general population, research should identify how depressive symptoms may shape disease prevention behaviors through preventive care (J. Xu et al., 2016).

Most extant research presumes that depressive symptoms present uniformly across or within groups of individuals. However, emerging quantitative literature finds significant heterogeneity in depressive symptoms, particularly among racial and ethnic minorities (Kim et al., 2011). To this end, determining how symptoms are grouped together can inform effective strategies for increasing depressed patients' health services use and mitigate the harmful effects of unmet need. The Center for Epidemiological Studies Depression Scale (CES-D) is one of the most widely-used population-based measures of depressive symptoms (Radloff, 1977). Although the CES-D factor structure has been validated among Black adults, few studies focus exclusively on Black men, who experience depressive symptomatology in markedly different ways, such as increased somatic complaints with non-physical etiology (Kim et al., 2011),(Kim et al., 2009; Nguyen et al., 2004; Perreira et al., 2005). However, less is known about how these symptoms cluster and associate with health care engagement. Further investigation of the CES-D factor structure in a community-driven sample of Black men would verify its underlying latent factors and determine the manner in which these constructs are associated with USOC status.

Scholars posit that missed opportunities for preventive health services, such as depression screening, often occur because Black men lack a usual source of care in the health system. A usual source of care (USOC), defined as a regular place or provider to receive regular medical care, serves as the primary gateway to preventive health services and increases continuity of care among diverse patient populations (Blewett et al., 2008; J. E. DeVoe, G. E. Fryer, R. Phillips, & L. Green, 2003; Sox et al., 1998). Yet, there are notable disparities in USOC access that are patterned across racial and gender lines. Moreover, Black men have some of our nation's highest rates of premature mortality due to preventable chronic disease (J. Xu et al., 2016) examination of the depression-USOC relationship has greater significance in this population. These disparities are often linked to diminished use of preventive health services, such as timely preventive screening and routine health examinations (Blewett et al., 2008; Cherry et al., 2007; W. P.

Hammond, Matthews, et al., 2010b). Recent data indicates that USOC procurement among non-Hispanic Blacks is below the national average, with only 81% reporting a USOC (Artiga, 2016). Men are also less likely to report a usual source of care than women (Ward BW, 2016; Weissman et al., 1991).

USOC prevalence rates are even more divergent for Black men, who report having a USOC at significantly lower rates than their male counterparts (Jennifer E DeVoe et al., 2003; Gaskin et al., 2007; Ward BW, 2016). Current investigations of USOC disparities cite socioeconomic barriers to health care access, highlighting the critical role of proximity to care, insurance status, and other economically-driven factors (Jennifer E DeVoe et al., 2003; DeVoe et al., 2011; K. T. Xu, 2002). However, a report from the Kaiser Family Foundation (2016) suggests that some USOC disparities are determined by non-economic factors. Their study found that 27% of Black adults delayed needed care for reasons other than cost, compared to just 19% of White adults. Consequently, emerging research focuses on the combined influence of social and psychological stimuli, known as psychosocial factors, in driving persistent disparities in health care access and utilization (Babitsch et al., 2012; von Lengerke et al., 2014).

The potentially deleterious impact of depressive symptomatology on Black men's USOC may be modulated by additional psychosocial factors related to race and gender. These factors include masculine role norms salience, restrictive emotionality, racial centrality, and John Henryism, which also appear to influence help-seeking behavior among Black men (Lehto & Stein, 2013; Matthews et al., 2013; Powell et al., 2016). Although previous research explores the independent influence of these factors, few studies examine their joint effect in driving USOC disparities among Black men. Below, I present a brief description of the psychosocial factors outlined above and review of extant research linking these constructs with the depression-USOC relationship.

Masculine role norms salience, defined as the shared cultural expectation of the male gender role, is one socialized aspect of identity that has been linked to health help-seeking behaviors (Addis & Mahalik, 2003; Levant et al., 1992). Masculine role norms salience are viewed as socially constructed and often position male help-seeking as a form of weakness (Courtenay, 2000). The impact of rigid adherence to masculine role norms salience on health help-seeking may be exacerbated when individuals experience depressive symptomatology because they also diminish motivations to seek care (Moller-Leimkuhler, 2002). Scholars suggest that although men's health care engagement is guided by masculine role norms salience, their influence is largely dependent upon the salience or level of importance assigned to these norms (Addis & Mahalik, 2003). To be certain, research generally finds more barriers to health help-seeking among Black men ascribing higher salience to masculine role norms salience (W. P. Hammond, Matthews, et al., 2010b). However, some studies cite positive influence of masculine norms in reducing delays to timely preventive health services(W. P. Hammond, Matthews, et al., 2010b). In light of this mixed evidence, further research is warranted to understand how masculine role norms salience operate when Black men are making decisions about whether to obtain a USOC.

Researchers also posit that prevailing masculine role norms salience sanction the appropriateness of disclosing issues to others and, thus, inhibit men from accessing preventive services through a regular provider (Addis & Mahalik, 2003; Townes et al., 2009). Restrictive emotionality is one dimension of masculine role norms salience that disparages disclosure of problems in order to preserve one's masculine self-concept (Levant et al., 2007) and negatively influence attitudes towards help-seeking (Berger et al., 2005; Mansfield et al., 2005; Tudiver & Talbot, 1999). Among Black men, studies also show that depressive symptomatology is further exacerbated by masculine role norms salience like restrictive emotionality, which censures crying, sadness, and vulnerability (Good & Wood, 1995; W. P. Hammond, 2012; Vogel et al., 2011). This dissertation asserts that endorsement of masculine role norms salience encouraging restrictive emotionality may work in similar ways to impact Black men's healthcare seeking behaviors. In other words, it is likely that Black men reporting higher endorsement of restrictive emotionality will have lower odds of acquiring a USOC.

Masculine role norms salience is also culturally situated and influenced by one's racial and ethnic background. As such, Black men's masculine role norms salience or beliefs about what it means to be a man are shaped by social by-products of race or cultural heritage. Racial identity, which is a sense of belonging based on the one's shared common heritage with a particular racial group, is one social by-product of race hypothesized to influence Black men's masculine role norms salience (Sellers et al., 1997a). Scholars further posit that masculine norms and racial identity operate together to shape attitudes towards help-seeking for Black men (Griffith, 2012; Powell et al., 2016). The Multidimensional Inventory of Black Identity (MIBI) is one of the most widely used measures of Black racial identity (Sellers et al., 1997b) and consists of seven subscales representing three dimensions of Black racial identity: centrality, ideology, and regard.

Centrality refers to the extent to which being Black is an integral part of one's self-concept and has been described in extant literature as the MIBI construct that is most sensitive to change in race-salient contexts (Jones et al., 2014; Powell et al., 2016; Seaton et al., 2009; Sellers et al., 2006). Specifically, settings that elicit higher racial centrality may influence one's interpretations and behaviors in these environments. One study by Shelton and Sellers (2000) found that individuals were more likely to report high racial centrality in race-salient conditions, such as simulated arguments between Black and White individuals. More recently, Cuevas and O'Brien examined racial centrality in the health care context and found that perceived discrimination mediated the relationship between racial centrality and medical mistrust. Conclusions revealed that those who cited Black identity as more important to their self-concept were more likely to perceive discrimination in the health care system and, in turn, reported higher rates of medical mistrust (Cuevas & O'Brien, 2017). Authors of the study conclude that the degree to which a patient identifies with Black identity may make the individual more attentive to social cues and produce mistrust in the health care system. In relation to Black men's USOC acquisition, racial centrality may produce heightened mistrust of the health care system which, in turn, may result in lower USOC acquisition.

Studies examining racial and ethnic health disparities among Black men also highlight the role of active coping dispositions that are situated in cultural norms of strength and self-reliance (Bennett et al., 2004; Hudson et al., 2016; Watson et al., 2008). John Henryism is one such coping disposition characterized by one's engagement in prolonged high-effort activities in response to psychosocial stressors. Extant literature finds that individuals reporting higher John Henryism also experience deleterious health outcomes, such as high blood pressure, increased BMI, and premature mortality (S. A. James, 1994). However, findings from studies assessing associations between John Henryism, depressive symptoms, and help-seeking are mixed. One study found that John Henryism moderates the positive association between racial discrimination and depressive symptomatology, such that relationship was weaker for men with higher scores of John Henryism than men with lower scores (Matthews et al., 2013). However, other studies focused more broadly on Black respondents found a positive association between John Henryism and depressive symptomology in the context of racial discrimination (Hudson et al., 2016; Neighbors et al., 2007). A single study by Powell et. al. (2016) determined that John Henryism was not significantly associated with health help-seeking barriers among Black men when considered simultaneously with masculine norms. Outside of this study, there has been limited evidence examining John Henryism in health services research involving Black men.

The current study

To address these gaps in the literature, this manuscript investigates which clusters of depressive symptomatology present the greatest barrier to USOC status among Black men. This aim draws from findings of Chapter 5 (Aim 1) to determine which confirmed CES-D factor structures are associated with USOC status in a community sample of Black men. Specifically, this study found that the 12-item CES-D scale is comprised of two correlated latent factors among Black men: interpersonal negative affect (INA) and diminished positivity (DP). Building on these results, we conducted a latent moderated structural equations (LMS) analysis to determine the extent to which psychosocial factors moderate the depressive symptomatology-USOC relationship. Based on previous research, we tested two hypotheses in the current study. First, it was expected that Black men with interpersonal negative affect symptomatology, as captured by the CES-D, would be less likely to report a USOC than diminished positivity symptoms (HY1). Second, we hypothesized that the previously described psychosocial factors would have an exacerbating effect on the proposed depression-USOC relationship, resulting in a more pronounced negative association between depression and USOC among those reporting high masculine role norms salience, John Henryism, and racial centrality compared to than those with lower scores (HY2). These hypotheses were explored using a latent moderating structural equation approach and informed by theories of healthcare utilization, stress and coping, and psychological reactance (Andersen, 1995; Brehm, 1966; Folkman et al., 1986; Lazarus & Folkman, 1984).

Methods

Participants

Data for this study were taken from the African American Men's Health and Social Life Study (2007–2010). The study sample included 683 community-residing African American men (aged 18 years and older). Convenience sampling methods were used in the AAMHSL to recruit a sample of Black men from various academic and community settings. Most participants (80.7%) were recruited from barbershops in Michigan and Georgia. The remainder of the study participants (19.3%) were recruited from academic institutions and events, which included a conference for African American men sponsored by a professional labor association. The academic institution was a community college located in Southeastern Michigan, and a historically Black university (HBU) in central North Carolina. Fifty percent of the community college population was male and 22% were ethnic minorities. The HBU student population was 77% African American and 33% male.

Study procedure

Black men age 18 and older were recruited through a variety of means, including flier advertisements, direct contact, word-of-mouth, specially advertised data collection events, and e-mail solicitation. Men who expressed interest in the survey were directed to study personnel. Before the study proceeded, informed consent was obtained, and the anonymous self-administered survey was administered (See Hammond, et al., 2010; Matthews, Hammond, Nuru-Jeter, Cole-Lewis, & Melvin, 2012).

Barbershops with a high customer volume were prioritized as recruitment sites because they typically had long wait times which minimized the amount of additional time required to complete the questionnaire by study participants, and because barbershops have previously been shown as being patronized by a socioeconomically diverse group of Black men (Hart Jr & Bowen, 2004). Initial contact with barbershops was made in-person or by telephone by study personnel. Upon agreeing to participate, signed consent forms were completed by barbershop owners. Barbers or receptionists, not study personnel, invited men to complete the questionnaire. Men who completed the questionnaire received a voucher for a free haircut, valued at $25. As an incentive for their participation in the study, the barbershop retained any unused value of the voucher. A four-year Historically Black College, a predominately White university, and a local public library also served as recruitment sites. Recruitment methods were similar at these sites, with the exception that study personnel recruited Black men rather than barbershop staff. Study participants were also encouraged to spread the word about the research team's presence and invite their Black male friends to complete a questionnaire. The research team solicited study participation in high-traffic areas such as the student union or eating areas at academic institutions; within the local public library study personnel were situated in a designated space to facilitate the recruitment process. Participants not recruited at barbershops received a $25 gift card. All study procedures were reviewed and approved by the Public Health-Nursing Institutional Review Board at The University of North Carolina at Chapel Hill.

Outcome variable

Usual source of care: A usual source of care (USOC) was measured in the AAMHSL survey with a single-item question "Is there a particular person or place (e.g. doctor's office, clinic, health center, or other place) that you usually go to if you are sick or need advice about your health?"

Independent variable

Depressive symptomatology: Depressive Symptomatology was assessed using the 12-item version of the Center for Epidemiological Studies Depression Scale (CES-D). This 12-item scale was administered as part of the AAMHSL study to assess depressive symptoms and has been previously validated in the proposed study population (Radloff, 1977; Roberts, 1980). This abbreviated version of the CES-D has been found to have acceptable reliability and a similar factor structure compared to the original 20-item version. Responses range between 0 ("rarely or none of the time") to 3 ("most or all of the time") and are summed to create an overall continuous score. Possible scores range between 0 to 36, with higher scores indicating more depressive symptomatology. The Cronbach's α for the CES-D scale is 0.79. Sample questions include: "I felt depressed", "My sleep was restless", and "I felt that I did was an effort".

Moderating variables

*Racial identity (centrality)**:*** Racial centrality was assessed using a 4-item centrality subscale of the Multidimensional Inventory of Black Identify (MIBI) (Sellers et al., 1997b). The centrality scale measures the importance of being Black to the respondent's identity. Response range from 1 ("Strongly Agree") to 7 ("Strongly Disagree"). Higher values on the racial centrality scale signify stronger endorsement of Black race as central to one's identity. The Cronbach's α for the racial centrality subscale is 0.87. Sample items include: "In general, being Black is an important part of my self-image", "I have a strong sense of belonging to Black people", "I have a strong attachment to other Black people", and "Being Black is an important reflection of who I am".

Masculine role norms salience: Masculine role norms salience were assessed using two scales: The Restrictive Emotionality and Masculinity Norms Salience scale. Restrictive Emotionality was assessed using a 7-item subscale within the MRNI scale to assess masculinity norms associated with emotional disclosure (Levant et al., 2007). For this subscale, a mean score was computed from responses ranging from 1 ("Strongly Disagree") to 7 ("Strongly Agree"). The Cronbach's α for this scale is 0.78. Sample items include "A man should never reveal worries to others", "One should not be able to tell how a man is feeling by looking at his face", and "Men should not be too quick to tell others that they care about them". Masculinity norms salience was assessed using a 9-item scale to assess the importance of masculinity norms to men's identity. This scale was developed from a qualitative study assessing manhood and meaning among Black men (W. P. Hammond & Mattis, 2005). Men were asked, "How important are the following characteristics (e.g., being strong, in control in a relationship, and independent) to your identity as a man?" and to rate responses on a scale ranging from 1 ("not at all important") to 5 ("extremely important"). Higher values indicated more importance ascribed to masculine role identity. The Cronbach's α for this scale is 0.81

John Henryism: John Henryism was assessed using the 12-item John Henryism Scale for Active Coping (S. A. James, 1994). This scale is used to assess an individual's general coping tendencies. Responses range from 1 ("Completely False") to 5 ("Completely True") and will be summed to provide a continuous measure. The Cronbach's α for this scale is 0.88. Sample items include: "I don't let my personal feelings get in the way of doing a job", "I am rarely disappointed by the results of my hard work", and "When things don't go the way I want them to, that makes me work even harder".

Sociodemographics : Sociodemographic variables assessed included age, education (<high school, some college, college or graduate/professional degree), insurance status, marital status (currently married vs. unmarried), and employment status (employed full time or part time vs. unemployed).

Statistical analysis

Descriptive statistics were conducted using SPSS version 24. Latent moderated structural (LMS) equation model was conducted using Mplus version 8. To conduct the LMS analysis, we followed a two-step process as outlined in previous studies (Klein & Moosbrugger, 2000; Muthen, 2012, Malowsky, 2015). First, we tested the overall fit of the measurement model, without interaction (Model 0). We ran this model using a maximum likelihood estimator and fit was assessed using CFI, TLI, and RMSEA fit indices within the criteria specified by Hu & Bentler (1999). Chi-square statistic was not used to assess model fit because it is sensitive to large sample size. Second, we tested subsequent models (Model 1, 2, 3, and 4) by entering each moderator to the model as a single interaction term using the XWITH command in MPlus. Significant moderators ($p<0.05$) were included in the final structural model.

Preliminary analysis

After exploratory and confirmatory factor analysis, we concluded that the hypothesized three-factor solution of the 12-item CES-D scale did not yield the best fit in the study sample. We then explored additional factor structures using an EFA on a randomly split half of the sample which retained a two-factor structure comprised of (1) interpersonal negative affect (INA) and (2) diminished positive affect (DPA). Additionally, results from the item-to-total correlation of the CES-D scale and EFA factor loading suggested that the “effort” item should be dropped from the sample to produce an 11-item scale comprised of the INA and PA factors. Our results from the confirmatory factor analysis on the second half of the random sample affirmed that this two-factor structure yielded the best fit in our study sample (CFI: 0.974; TLI: 0.967; RMSEA: 0.06; 90% CI: 0.6-0.08). Consequently, we used factor scores from the two-factor CES-D scale to conduct the remainder of our measurement and structural models using the latent moderated approach. Figure 6.1 illustrates the final two-factor solution and item loadings of the 11-item CES-D scale used in this study.

Results

Descriptive statistics of AAHMSL study sample

Table 6.1 illustrates descriptive statistics of the AAMHSL study sample examined in this study. The majority of participants (n=367; 57.6%) reported having a usual source of care. Participants who reported a usual source of care were significantly older (mean: 34.57 years old) and more likely to have higher educational attainment, married, or insured. Participants who reported no usual source of care had significantly higher mean CES-D scores than those with a USOC (12.58 vs. 9.96, $p<0.001$). Table 6.2 illustrates bivariate correlations between the CES-D scale and other study variables identified as latent moderators, including means and standard deviations. Zero-order latent variable correlations indicated that the CES-D scale was significantly negatively correlated with John Henryism, racial centrality, ($r= -0.41$ and -0.40, respectively, $p<0.001$), but was not significantly correlated with restrictive emotionality. The CES-D scale was also significantly positively correlated with masculine role norms salience ($r=0.11$, $p<0.05$).

Measurement Model-Associations between CES-D latent factors and USOC status (HY1)

The fit of the measurement model is illustrated in Figure 6.2. Hypothesis 1 tested the direct association between the two CES-D latent factors, interpersonal negative and positive affect, and USOC status among Black men. Overall, the measurement model demonstrated acceptable fit (CFI: 0.925, TLI: 0.903, RMSEA: 0.044, 90% C.I. 0.035-0.054). All loadings of the items on their latent variables, were statistically significant, $p<0.001$. The adjusted model indicated that interpersonal negative affect was negatively associated with USOC status ($\beta =-0.770$, $p<0.01$) (Hypothesis 1) such that higher interpersonal negative affective symptomatology was associated with a lower likelihood of reporting a usual source of care. In contrast, symptomatology related to diminished positive affect resulted in increased likelihood to report a USOC, however this association was not significant, (β = 0.693, p=0.096).

Latent Interactive Model-Race and gender-related factors as an exacerbating moderator of the depression factor-USOC relationship (HY2)

To conduct the LMS approach, several structural models were tested to assess the direct and interactive effect of our proposed moderators in the depression-USOC relationship. Each structural model included a single moderated variable and was tested directly in the full regression model and included as an interactive term using the XWITH command. Hypothesis 2 tested this moderated structural model for each race and gender-related moderator (e.g. racial centrality, John Henryism, masculine role norms salience, restrictive emotionality). Given the results from hypothesis 1, interaction terms only examined the relationships between the INA factor and moderators.

The interaction terms for the four race and gender-related factors were then tested independently in the structural model. Each moderator was assessed by creating an interaction term with the INA factor, the depressive symptom factor significantly associated with USOC status in HY1 results. First, to test the moderating influence of John Henryism, we added an interaction term, termed INA*JHAC, that examined the interaction between the interpersonal negative affect factor and John Henryism scale. Results indicated that the INA*JHAC term did not significantly modulate the relationship between the INA factor and USOC use, (β = -0.017, p=0.790). Similarly, analyses yielded non-significant interactive terms for racial centrality (INA*MIBI: β = -0.015, p=0.797), restrictive emotionality (INA*MRNI: β = -0.031, p=0.592), and masculine role norms salience (INA*MAN: β = -0.058, p=0.852), respectively. These findings indicate that although the interaction effect was in hypothesized direction, such that moderators exacerbated the negative relationship between depressive symptoms and USOC status, the effects were not significant. Taken together, hypothesis 2 was not supported by latent moderated SEM results.

Discussion

Using a latent moderated approach, we examined the relationship depressive symptomatology and USOC status among a community-based sample of Black men. This study builds on current evidence that suggests negative mood, as reflected by CES-D score, resulted in lower odds of reporting a USOC in a nationally-representative sample of Black men (W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011). Beyond these findings, our analysis extends this conclusion to describe *which* depressive symptom features influence Black men's USOC status. Specifically, we found that symptomatology that reflects interpersonal conflict coupled with depressed mood is associated with a lower likelihood of having a USOC. To this end, our hypothesis regarding the influence of CES-D factors and USOC reporting was confirmed. Interpersonal negative affect had a significant and negative association with reporting a USOC. These results suggest that Black men with depression symptoms that are consistent with hallmark features of depression (e.g. crying, sadness, etc.) may be less likely to establish a regular contact within the health care setting. In this sample, diminished positive affect did not have a significant impact on USOC status, which suggests that diminished positive affect may not contribute as strongly to health care system engagement among Black men. Scholars conducting research in this area should narrow their focus to examine how affective features related to depressed mood present motivational barriers to help-seeking in the primary care setting.

Contrary to our hypothesis, we did not find significant interactive effects of any race and gender-related factors in the latent moderated analyses. The decision to model these psychosocial factors as moderators was motivated by the use of the Transactional Model of Stress and Coping framework, which positions primary and secondary appraisal processes as factors that influence the impact of a stressor on health behavior (Lazarus & Folkman, 1984). In the current study, these moderators were hypothesized to function as part of the appraisal processes that influence whether depressive symptoms (stressor) influence USOC status (health behavior). Furthermore, extant research provided limited support for causal mediated pathways between the psychosocial factors and USOC use (Matthews et al., 2013; Powell et al., 2016).

Given our non-significant results, we believe that these psychosocial factors may not operate in the ways we previously hypothesized. One possibility is that these factors are more salient in other health services indicators described in extant studies, including number of primary care visits, preventive services uses and delays, and satisfaction of care (Corbie-Smith et al., 2002; Fiscella et al., 2000; Magnezi, Glasser, Shalev, Sheiber, & Reuveni, 2014; Matthews et al., 2013). It is also possible that these race and gender-related factors function differently in the context of other psychosocial constructs, such as everyday discrimination, sense of control, and medical mistrust. These measures have been cited in previous literature examining delayed preventive care (Adams et al., 2017; Cuevas & O'Brien, 2017; Powell et al., 2016), but pathways to USOC use remain unexplored. Future studies should consider incorporating other psychosocial measures that are salient in the Black men's life experiences assists in further understanding intermediary pathways to obtaining a regular health care provider.

Despite these conclusions, there are several important limitations that impact the overall generalizability of the study. First, our outcome variable of USOC status was assessed using a single self-reported question with binary response categories (e.g. yes/no). As a result, we may have not have captured the subtle ways that USOC categories (e.g. private practice, health clinic, hospital outpatient, etc.) impact the examined relationship. Furthermore, we operationalized the USOC variable as a function of obtainment (e.g. presence or absence), rather than use. This framing of our outcome implies that those who report a USOC are also making timely health care visits, which may not be the case. Future studies should examine this phenomenon using more comprehensive measures of USOC status beyond what was assessed in this study. Finally, given the cross-sectional nature the AAMHSL dataset, we were unable to assess temporal relationships between the study variables. Future studies assessing these variables using a longitudinal design should focus on establishing temporal relationships of these key variables to determine whether the onset of diminished mental health status precedes health care system avoidance among Black men.

Although our analysis did not yield significant moderation effects for our proposed psychosocial moderators, it is important to note that these psychosocial factors have not yet been comprehensively assessed in the health care setting. In fact, research utilizing these psychosocial factors have examined its influence on attitudes towards the healthcare system, such as barriers to health help-seeking and perceived healthcare discrimination (Cuevas & O’Brien, 2017; Powell et al., 2016). Additionally, studies show that depression is associated with diminished attitudes towards healthcare services, such as perceived quality, communication, and trust towards the healthcare system in mixed study samples (J. M. Thorpe et al., 2012). Related to Black men’s healthcare engagement, other scholars argue other mediating pathways may exist in the healthcare setting such as sense of control, self-reliance, and medical mistrust (Adams et al., 2017; Powell et al., 2016). These conclusions point to the presence of potential mediators in the pathway between depressive symptomatology and USOC reporting that may better explicate our findings and warrant more attention. To address these evidentiary gaps, researcher must continue to test intervening pathways that may more concretely explain the impact of depressive symptomatology on healthcare engagement among Black males.

In contrast to previous research, the current study examines how depression operates in the healthcare system and the extent to which psychosocial moderators influence this relationship. Overall, the current study suggests that Black men who experience symptomatology that yields discordant relationships with others coupled with negative mood may be most avoidant in establishing relationships in the healthcare system via a USOC. This finding also argues that Black men exhibiting these symptoms may be at a greater risk for delayed or missed preventative health services screening, resulting in increased future medical costs and higher risk of mortality due to preventable disease.

Conclusion

Black men experience a diverse range of depressive symptomatology that may impact their desire to establish roots in the health care system. Consequently, opportunities to receive timely preventive health services aimed at prolonging and enhancing Black men’s lifespans are missed. Findings from this study illuminate the greater challenge of catalyzing Black men with depressive symptoms to create meaningful and sustained linkages in the health care system. Researchers must develop more robust strategies for improving Black men’s health, which requires special attention paid to explanatory pathways through which men convey depressed affect. To build more equitable models of health care delivery, future investigations must examine the unique contexts in which Black men navigate within society which, in turn, influences their willingness to engage in health-promoting behavior.

Tables and Figures

Table 6.1: Descriptive Statistics by USOC Status

	USOC (n=367)	**No USOC (n=270)**
Age, mean [SD]**	34.57[11.959]	29.12[9.289]
Race/Ethnicity, %		
African American	93.9	92.7
Caribbean	1.9	1.1
Afro-Latino	0.8	0.4
Continental African	0.3	0.8
Biracial	1.4	3.8
Education, %*		
Less than high school	2.8	5.3
High school diploma or technical program completion	27.6	40.3
Some college	32.3	31.9
College graduate or higher	37.2	22.4
Marital Status, % married*	32.5	19.0
Insurance Status, % yes**	76.8	44.8
CES-D score, mean [SD]**	9.96 [5.72]	12.58 [6.029]

p<0.01*

p<0.001**

Table 6.2: Means and Bivariate Statistics for Study Variables

	Scale	Means [STD]	Standardized Cronbach's Alpha	1	2	3	4	5
1	CES-D Total Score	11.18 [6.98]	0.785	--	-0.41**	0.22	-0.40**	0.11*
2	John Henryism	46.67 [8.00]	0.878		--	0.20**	0.54**	0.16**
3	Restrictive Emotionality	28.03 [8.38]	0.778			--	0.22**	0.23**
4	Racial Centrality	21.52 [5.57]	0.870				--	0.06
5	Masculine role norms salience	31.37 [6.94]	0.809					--

*p<0.05

**p<0.001

Figure 6.1: Confirmatory Factor Structure and Factor Loadings of CES-D Scale Used in the Current Study (Aim 1)

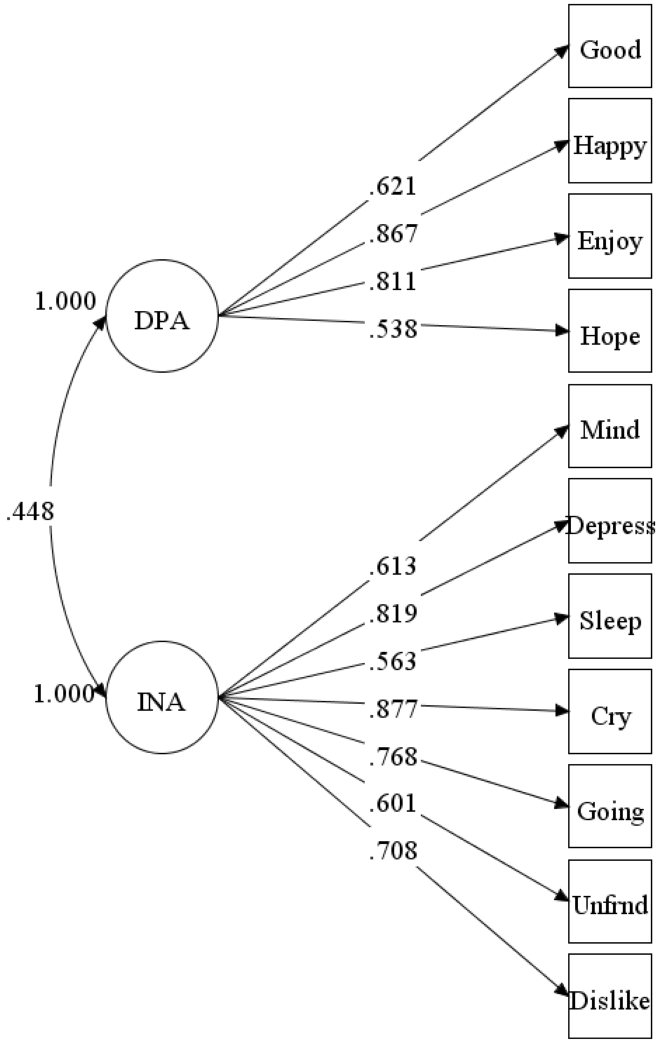
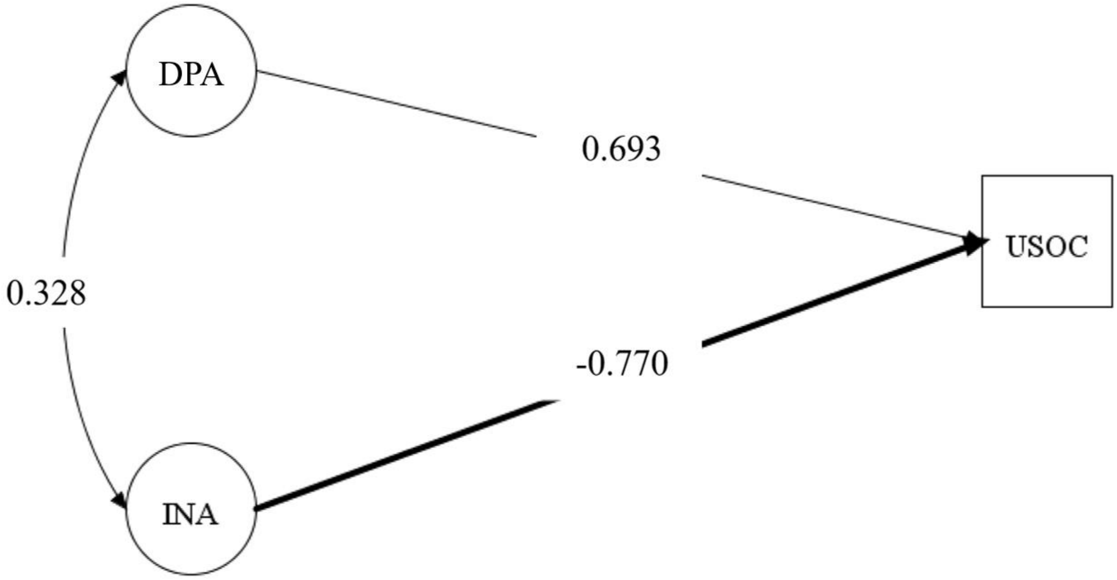


Figure 6.2: Model 0 Main Effects Model Without Latent Moderation



DPA: Diminished positive affect

INA: Interpersonal negative affect

USOC: Usual source of care

Bold regression coefficients indicate p<0.001

CHAPTER 7: STAKEHOLDERS' PERCEPTIONS OF BLACK MEN'S DEPRESSION AND HEALTH CARE ENGAGEMENT: A CONCEPT MAPPING APPROACH (AIM 3)

Introduction

Black men have some of our nation's highest rates of premature mortality due to preventable chronic disease (J. Xu et al., 2016). These disparities are often linked to diminished use of preventive health services, such as timely preventive screening and routine health examinations (Blewett et al., 2008; Cherry et al., 2007; W. P. Hammond, Matthews, & Corbie-Smith, 2010; W. P. Hammond, Matthews, et al., 2010b). Scholars posit that missed opportunities for preventive health services often occur because Black men lack a usual source of care (USOC) in the health system, defined as a regular place or provider to receive regular medical care (Blewett et al., 2008; J. E. DeVoe et al., 2003; Sox et al., 1998).

Although a large majority of Americans report access to a regular place or provider for medical care, there are notable disparities in USOC access that are patterned across racial and gender lines (Ward BW, 2016). Recent data indicate that non-Hispanic Blacks report having a USOC at rates significantly below the national average (Artiga, 2016). These findings diverge even more for Black men, who report having a USOC at significantly lower rates than their male counterparts (Jennifer E DeVoe et al., 2003; Gaskin et al., 2007; Ward BW, 2016). Extant literature exploring USOC disparities in this population cite socioeconomic barriers to health care access, highlighting the critical role of proximity to care, insurance status, and other economically-driven factors (Jennifer E DeVoe et al., 2003; DeVoe et al., 2011; K. T. Xu, 2002). In addition to socioeconomic drivers of USOC status, other studies have cited physical health status (e.g. presence of chronic disease) and demographic factors (e.g. age, marital status, etc.) as key determinants of USOC use among Black men (W. P. Hammond, Mohottige, D., Chantala, K., Hastings, J. F., Neighbors, H. W., & Snowden, L., 2011).

While previous investigations focus almost exclusively on physical health status drivers of disparities in health care acquisition, factors associated with mental health status receive limited attention (Leaf et al., 1985; Li et al., 2011). Emerging research linking mental health status to indicators of health care access are somewhat mixed. For example, a study by Hibbard and colleagues (2007) found that depressive symptoms predicted diminished patient activation towards a variety of self-managed health behaviors, including establishing regular contact with a USOC. Such findings suggest that depressive symptoms influence the decisional pathway to USOC acquisition via breakdowns in the motivational processes related to medical help-seeking (Hibbard et al., 2007; Leaf et al., 1985; J. M. Thorpe et al., 2012).

Although most extant research presumes that depressive symptoms present uniformly across or within groups of individuals, recent studies find significant heterogeneity in depressive symptom presentation among men and racial and ethnic minorities (Kim et al., 2011; Martin, Neighbors, & Griffith, 2013). Despite the aforementioned evidence linking depressive symptoms and USOC status, few studies assessing this association focus exclusively on Black men, who experience prolonged severity and chronicity associated with depressive symptoms in comparison to their White counterparts (D. R. Williams et al., 2007). In fact, outside of a single study conducted by Watkins and colleagues (2013) which qualitatively assessed Black women's perceptions of depression among their male counterparts, few studies report the constellation of symptoms that encompass depression in this population. This dearth of evidence represents a growing need for researchers to elicit perspectives on varied symptomatology in the healthcare setting from those more in tune with how these symptoms manifest in Black men's lived experiences. To address this need, scholars should consider the use of participatory approaches to provide a stronger foundation for study conclusions that are informed by stakeholders who are actively invested in improving linkages between mental health and health services use.

Establishing early linkages to the health care system through a USOC is critical for improving disparate rates of premature mortality due to preventable causes among Black men (Ault-Brutus, 2012; Corbie-Smith et al., 2002; Williams, 2003). Given the dearth of knowledge on how mental health affects linkages to the healthcare system for Black men, it is crucial to understand from their perspective on how depressive symptoms influence USOC status. Thus, the goal of this study was to actively engage Black men and stakeholders in a participatory exploration of how depression is conceptualized and associated with USOC use among Black men. We hypothesized that participants would conceptualize additional underlying and latent factors associated with depressive symptomatology that are distinct from commonly used epidemiologic and clinical measures for depression. To achieve study goals, we used concept mapping methodology to engage community stakeholders in our research questions and yield a participant-driven visual display of the findings.

Methods

Concept mapping is a structured mixed methods approach to understanding participants' views on a particular research topic and has been applied widely to critically engage communities in public health research (Burke et al., 2005; W. M. Trochim, 1989; Velonis et al., 2018). The method combines qualitative data collection procedures and quantitative analytic approaches to create a pictorial representation of stakeholder input. In this study, we used this method to generate conceptualizations of how depressive symptomatology was described and understood from the perspectives of Black men and relevant stakeholders. The process involves three phases, (1) brainstorming, (2) sorting and rating, and (3) interpretation. Brainstorming occurs through a group process in which participants discuss and generate short answers to a focal question, described as *statements*. Participants then use generated statements in the sorting and rating phases to create conceptually distinct statement categories and rate based on importance to USOC use. Finally, the interpretation phase involves discussion of analytic output and action-oriented implications of study findings. The research protocol was reviewed and approved by the Institutional Review Board at the University of North Carolina at Chapel Hill.

Community Advisory Board involvement

To support our participatory research process throughout the study design and analytic process, we convened a Community Advisory Board (CAB). The CAB was comprised of three members, two Black men and a Black female primary care provider, who were able to offer a community-driven perspective of the research questions. Members were selected based on ability to participate in periodic conference calls, interest in the research questions, and willingness to engage community leaders on the research topic. Recruitment was conducted during community-based research studies focused on Black men's health by research staff. The CAB contributed ideas related to the concept mapping process prior to its initiation by assisting with refinement of the focal question, brainstorming participant recruitment strategies, and reviewing study materials for clarity. Once the study launched, the CAB assisted with recruitment efforts, helped refine brainstormed items, and participated in the interpretation session at the conclusion of the study. CAB members also provide valuable insight towards action-oriented strategies for dissemination to key stakeholders in academic, government, and community settings.

Recruitment

Participants for the concept mapping process were recruited using a non-random purposive sample of eligible individuals residing in the Triangle area of North Carolina.

Purposive sampling is the preferred sampling frame for concept mapping to achieve heterogeneity in the reflected items generated from participants. As described by Kane and Trochim (2007), “the idea is to nonrandomly select a broad range of persons who are likely to reflect the full spectrum of ideas that are relevant for the concept mapping process” . As such, Black men, women, and primary care providers were recruited for participation in various phases of the concept mapping study. Black men were involved throughout all three phases of the study, whereas Black women and providers were only involved in the initial brainstorming phase of the study.

Black women were included in the brainstorming phase due to their critical role as caregivers and facilitators of Black men’s health behaviors throughout the lifecourse (Blocker et al., 2006; D. C. Watkins et al., 2013). To this end, scholars posit that Black women lend a nuanced perspective on the expressions of depressive symptoms among their male counterparts (D. C. Watkins et al., 2013). Providers were also included in the brainstorming activity to incorporate insights towards clinical presentations of depressive symptomatology and patient-provider relationships with Black men. Black men and women participants were recruited through targeted flyers distributed through community organizations and listservs of interest (e.g. fraternities, male-centered organizations, etc.). Both stakeholder groups were recruited through academic and community-based networks, such as gender-specific student organizations and male-centered mentoring organizations in predominantly Black neighborhoods, to generate a diverse range of eligible participants. After the first round of recruitment, Black men and women were also recruited using direct email interaction and snowball sampling from previous participants. Primary care providers were recruited using direct contacts from CAB members and a recruitment services support team at the North Carolina Translational and Clinical Sciences

Institute (NC TraCS), home of the Clinical and Translational Science Award (CTSA) at the University of North Carolina at Chapel Hill. Eligibility requirements for study participants included being 18 years or older, English-speaking, and self-identified as a Black man, Black woman, or primary care provider of any racial or ethnic background.

Participants

Overall, there were 36 participants throughout all three phases of the study; 23 Black men, 10 Black women, and 3 primary care providers. The brainstorming phase was comprised of 21 participants across all three stakeholder groups (e.g. Black men, Black women, and primary care providers). 22 Black men participated in the sorting and rating session and comprised the analytic sample for study results. Participants involved in the analytic sample were predominantly 18-29 years old (50%), single (68%), employed full or part-time (64%), and reported having a usual source of care (68%). Finally, the interpretation session included five participants across all stakeholder groups.

Data collection

At baseline, participants completed a brief survey comprised of basic demographic information (e.g. age, occupation, etc.) and an assessment of depressive symptoms using the Center for Epidemiological Studies Depression (CES-D) 12-item scale (Radloff, 1977). This abbreviated version of the CES-D measure was used in this study for three reasons. First, the scale was included to capture symptomatology in a community-based setting using a widely applied measure. Second, the CES-D was incorporated in our analytic process (pattern matching) to determine if findings differed by reported level of depressive symptomatology. Finally, as part of a larger mixed-methods study, we were able to compare findings to concurrent quantitative studies examining the same research question.

A cut-off value of the 12-item CES-D was derived using Kohout's formula (Kohout et al., 1993). This formula was developed to provide a standardized conversion method to determine a cut-score representing clinically meaningful depression that is comparable to the full 20-item CES-D measure (Torres, 2012; Zauszniewski et al., 2009). Since the CES-D scale used for this study was comprised of 12 items and scored identically to the original 20-item CES-D, the total possible score was 36/60=0.60, which yields a cut-off score of 16*0.60 = 9.6, or approximately 10. Thus, we used a standardized cut score of 10 for the abbreviated scale to dichotomize depressed and non-depressed study participants.

To ensure that all participants understood the terminology used during the concept mapping sessions, a unifying description of the terms "major depressive disorder", "depressive symptoms", and "usual source of care (USOC)" were provided at the outset of our sessions (Table 7.1). All sessions were led by the lead author and discussions were audio recorded.

The **brainstorming phase** consisted of group discussions where participants were asked to brainstorm or "free list" ideas related to the focal question: "What are distinct characteristics of depression among Black men?" Discussions generated responses to the focal question and were guided by open ended probes related to the study topic with the goal of producing a large list of items from the participants. Two in-person brainstorming sessions were conducted in-person with Black men and Black women, respectively. Primary care providers completed the brainstorming activity online due to time constraints. The initial brainstorming sessions from all three stakeholder groups yielded 119 non-unique items that were synthesized into 68 unique statements related to the focal question (Table 7.1). These statements, listed in Table 7.2, were used for the subsequent phases of the research study.

During the **sorting and rating** phase, participants placed the master list of 68 items generated from the brainstorming activity into piles based on conceptual similarity. Participants labeled piles independently based on how they perceived the items related to each other. Following the sorting process, participants were asked to rate each item according to its importance to the provision of a usual source of care for Black men (Table 7.1). Participants rated each generated statement on a scale of importance, with 1 being the least important thing influencing use of a USOC among Black men and 5 being the most important, relative to other items. The final phase of concept mapping, **interpretation**, occurred after initial concept mapping analysis was completed and included discussions of analytic output and action-oriented planning for future research studies with CAB members and select participants from previous phases of the study. Participants were selected by research staff based on active participation throughout the study, interest in action-oriented discussions, and availability.

Analysis

Data analysis was conducted using Concept Systems Global Max software. The software uses multidimensional scaling (MDS) and hierarchical cluster analysis (HCA) to yield a visual display which for this study focused on assessing the importance of depressive symptom characteristics to USOC use. Prior to inputting brainstormed items into the software, the 119 items generated through the brainstorming phases were distilled into 68 statements that succinctly answered the focal question. The purpose of this process was to remove redundant statements and create items that could be easily discernable by participants in the subsequent two phases of the study. This synthesis of brainstormed items was conducted by the lead author in coordination with the CAB. Data from the sorting and rating process were entered manually into Concept Systems Global Max software by members of the research team. The resulting ratings were used in hierarchical cluster analysis to provide the overall rating of depressive symptom domains to receiving a USOC (cluster rating maps) and compare and contrast cluster ratings by demographic characteristics (pattern matches).

Finally, in the interpretation phase, members of the brainstorming and sorting/rating phases came together to review concept mapping analytic output and confirm the appropriate cluster solution that best represented the conceptual domains of the study. In addition, participants worked together to label each conceptual cluster identified by the cluster maps and discuss implications of the cluster rating maps and pattern matches for future action-oriented research. Participants in the interpretation session were comprised of CAB members and previous male participants selected based on CAB input. Collectively, demographics for this phase of the study reflected the targeted stakeholder community of interest (e.g. Black men, Black women, and providers).

Results

As described above, the phases of concept mapping collectively yield a conceptual model of the relationships between depressive symptomatology and USOC use among Black men. Consequently, results reported below reflect a participant-driven conceptualization of Black men's depression experience and its impact on health services access via a USOC.

Cluster map (Figure 7.1)

Using multidimensional scaling (MDS) techniques, we derived a point map to aggregate statements from the sorting exercise. The point map illustrates a clustered grouping of generated statements using data from the sorting activity. In this map, points that are closer in proximity to each other indicate how often participants grouped these statements together during the sorting phase. To this end, points that are clustered together indicate that participants grouped these items together more often and reflect similar concepts related to depressive symptomatology. A stress index value was used as a test of fit statistic and evaluated based on criteria specified by

Trochim, which signals acceptable ranges between 0.155 to 0.352 (Trochim, 1993). The generated point map served as the foundation for cluster maps and rating maps (Figures 7.1 and 7.2). A cluster map was generated from the initial point map using hierarchical cluster analysis (HCA) with Ward's algorithm (Kane & Trochim, 2007) to partition the MDS configuration into non-overlapping clusters of conceptual similarity. The maximum number of clusters was generated using Concept Systems software and was subsequently paired down to a meaningful cluster solution by the researcher and the Community Advisory Board.

Figure 7.1 illustrates the final six-cluster map derived from data from the sorting phase of the study. Each point and associated number corresponds to the statements reflected in Table 7.2. Numbered points that are closer in proximity to each other reflect conceptually similar statements that were sorted together more often by participants. In contrast, number points that are positioned further apart reflect statements that are not conceptually similar, and thus, sorted apart more often. The final cluster map is comprised of six clusters that include (1) Physical States, (2) Emotional States, (3) Internal Conflict, (4) Communication with Others, (5) Social Pressures, and (6) Diminished Drive. Each cluster label reflects common themes of the statements in that particular cluster and was named by study participants during the Interpretation session. The stress index for the cluster map was 0.287, which signals acceptable goodness-of-fit for our overall cluster map.

Cluster Rating Map (Figure 7.2)

A cluster rating map examines a single cluster in more detail using participant rating data. Each cluster is visually stacked, such that the higher the stack, the higher the average rating is for that particular cluster. This output illustrates generated items that are strongly related to each cluster and show via visual representation how important each cluster is in relation to one another. Figure 7.2 illustrates the cluster rating map based on importance to USOC use.

Participants rated *physical states* (Average rating: 3.49) and *diminished drive* (Average rating: 3.30) as most important for Black men's USOC use. This was followed by *emotional states* (3.16), *communication with others* (3.06), and *social pressures* (3.00).

Pattern Matches (Figures 7.3-7.5)

Pattern matching illustrates a statistical and graphic analysis of the importance of each cluster by demographic characteristics collected at baseline. A pattern match is illustrated using a "ladder graph" that consists of two vertical axes, which are joined by lines representing the average value for each cluster. A Pearson correlation was generated to examine strength of relationship between cluster domains in each demographic group. Figure 7.3 illustrates differences in cluster ratings by participants' usual source of care status. Black men with and without a usual source of care in the study sample rated *physical states* as the most important depressive symptom cluster associated with Black men's USOC use. Among those with a usual source of care, *diminished drive* was an important secondary depressive cluster for USOC use. In contrast, Black men without a USOC rated *social pressures* as an important secondary cluster. The Pearson correlation between the two groups was 0.35.

Next, we compared average cluster ratings by employment status. The pattern matching graph illustrated in Figure 7.4 indicates that there were differences in the average cluster ratings among Black male participants who were employed versus unemployed. Among employed participants, *physical states* were most important to Black men's health, followed by *diminished drive* and *emotional states.* In contrast, unemployed study participants rated *diminished drive* as most important, followed by *social pressures* and *emotional states*. The correlation between the two groups was -0.35, which reflects a moderately negative association in average cluster ratings by employed and unemployed participants.

Finally using these cut-off scores of the CES-D scale, we compared average cluster ratings among Black male participants with and without depression. Once again, *physical states* and *diminished drive* was of primary and secondary importance to Black men's USOC regardless of depression status. However, Black men with depression rated *diminished drive* as more important to USOC use than men without depression. In fact, Black men with depression ranked this cluster with similar importance to *physical states*, whereas those without depression ranked it in closer proximity to the remaining depression clusters. The correlation between the two groups was 0.66.

Comparison to common psychometric assessments for depression (Table 7.3)

Table 7.3 illustrates a comparison of cluster domains obtained through the concept mapping study with commonly used depression measures. In particular, we compared concept mapping clusters with four instruments: (1) the Center for Epidemiological Studies Depression scale (CES-D), (2) Patient Health Questionnaire (PHQ-9), (3) Composite International Diagnostic Interview (CIDI), (4) Beck Depression Inventory (BDI). In doing so, we were interested in understand whether and to what extent constructs of depression identified in the concept mapping study were represented in commonly used measures used in population and clinical settings.

We found that none of the instruments included in Table 7.3 cover all of the domains generated by our study. Collectively, all but one cluster (*social pressures*) was reflected in one or more of the four depression measures. *Physical and emotional states* as well as *diminished drive* were domains present in all four instruments. Although these domains were widely represented across survey instruments, the scope of items reflected in each domain was not comparable. For instance, while the Center for Epidemiological Studies-Depression (CES-D) scale has a factor related to *physical states* (described as somatic symptoms), it does not include the same type of cardiac-related items that are present in our concept mapping domain (e.g. heart palpitations and high blood pressure) (Radloff, 1977). Similarly, the Beck Depression Inventory (BDI) includes items related to experiencing guilt and feeling worthless that is mirrored in the *internal conflict (Beck, Steer, & Carbin, 1988)*. However, our domain also includes items that reflect conflicts in within-group social cohesion (e.g. not feeling supported by the Black community) and lifecourse-related transitions (e.g. change in mood over time as men age).

The PHQ-9 and CIDI measures includes items that were not included in our study, namely motor retardation or hyperactivity as a function of depressed mood. Moreover, items from the PHQ-9 scale mirrored only three out of the six concept mapping clusters (*physical states, emotional states, and diminished drive).* This result may be due, in part, to the small number of items that comprise the measure (9), compared to the other instruments (20 items or more) and brainstormed items from our study (68).

Discussion

The current study provides crucial insight on which depressive symptoms influence usual source of care use among Black men. Moreover, this study provides a vivid conceptualization, derived from the language and perspectives of Black men and key stakeholders, of depressive symptoms conceptualizations. Findings from this study illustrate the breadth to which Black men and stakeholders describe and contextualize depressive symptoms. Overall, our cluster rating maps found that *physical states* related to depression, such as insomnia and weight fluctuations, were most important to usual source of care use among our Black male participants. This finding remained consistent when comparing ratings by USOC status (Figure 7.3) and CES-D score (Figure 5) but was not a major driver of USOC use among unemployed Black men in our sample (Figure 7.4). Our results add additional support to evidence indicating associations between somatic depressive symptoms and self-management behaviors among men (Anderson et al., 2001; Lustman et al., 2000; Melin et al., 2013). The findings from our study extend this research by relating somatic depressive symptoms to key health services utilization behaviors (e.g. USOC use) and distinguishing the relative importance of USOC use by key demographic factors. Understanding the physical expressions of depression at the symptom level may add further support to these findings and indicate need for more effective anti-depressive treatments. Moreover, future research is needed to understand the extent to which unemployment may impact Black men's appraisal of depressive symptoms and help-seeking in the primary care setting.

As hypothesized, results from the concept mapping study highlight other domains of depressive symptomatology that are not currently captured in current psychometric measures. While cluster map results highlight symptomatology that is captured in common diagnostic tools, other findings present opportunities for further investigation. Specifically, we found that items that comprised the *social pressures* cluster were not reflected in any commonly used measures of depression. Of note, items in the *social pressures* cluster were rated as particularly salient for health services use among Black men in our sample that reported not having a USOC (Figure 7.3) or were unemployed (Figure 7.4). This cluster was comprised of a diverse range of items that broadly reflected the impact of the social environment on Black men's health care use (e.g. competitive drive, adherence to gender norms of success and power, etc.). Overall, this cluster highlighted tensions with maintaining gender role expectations as a key aspect of the Black male depression experience. Forthcoming studies should also examine the extent to which these social pressures are salient among Black men with varying socioeconomic status or healthcare services use patterns.

The findings from this study have implications for how healthcare providers can better serve Black men. There are a number of approaches that clinicians can take to ensure stronger therapeutic alliances with their Black male primary care patients. First, depressed Black men may be more likely to present with medically unclear somatization, which is consistent with previous literature on depression recognition in the healthcare setting (Laurence J Kirmayer, 2001; L. J. Kirmayer, Robbins, Dworkind, & Yaffe, 1993; Shacham, Basta, & Reece, 2008). Consequently, providers in the primary care setting should be more sensitive to the underlying mental health conditions that may result in manifested physical symptoms. Previous studies examining this phenomenon found that Black men's depressive symptomatology may be articulated in ways that diverge from hallmark signs of depressed mood due to prevailing masculine scripts that disparage crying and vulnerability (Addis & Mahalik, 2003; Akinyemi et al., 2017; D. C. Watkins et al., 2013). Consequently, special attention should also be paid to how Black men articulate aspects of their lived experience in patient-provider interactions to improve stronger therapeutic linkages and recognition of depressive symptoms in the primary care setting.

Given these findings, we argue that current psychometric assessments are not capturing the full range of depressive symptom expression among Black men. Thus, future research should focus on the extent to which diagnostic interviews and population-based measures can be improved by probing on somatization and diminished drive symptoms. Currently, many depression measures used in the clinical setting are skewed towards the presence of negative affect or depressed mood. Yet, this study shows that Black men may portray symptomatology in the health care setting that is more nuanced. The omission of these more subtle descriptors in common psychometric assessments may explain the low prevalence estimates of Black men's depression in population-based studies compared to the general population (E. Ward &

Mengesha, 2013). Unintended consequences of misdiagnosis or underreporting of depression in the population may have potentially deleterious outcomes in this population, including physical health comorbidities, psychiatric hospitalization, or death by suicide (Chung et al., 2012; W. P. Hammond, 2012; Schnurr, Friedman, Sengupta, Jankowski, & Holmes, 2000; Trent, Rushlau, Munley, Bloem, & Driesenga, 2000). Consequently, researchers working to improve Black male life expectancies must consider intervening on the diverse range of symptomatology that influences observed health disparities in this population.

Despite these overall conclusions, there are some limitations that impact the generalizability of our findings. The purposive sampling approach used in this study yielded results that are not broadly generalizable across populations. Given the intended goal of the study to capture subjective depression experiences of Black men, we do not incorporate perspectives that can be applied to other groups, such as Black women or non-Black men. However, this sampling technique is consistent with previous concept mapping studies and qualitative approaches, which seek to produce a subjective conceptual framework based on participant responses (Burke et al., 2005; Kane & Trochim, 2007; W. Trochim, 1989; Velonis et al., 2018).

Overall, concept mapping methodology is a valuable tool to yield stakeholder-driven perspectives on depression and its health services use among Black men. This method is particularly advantageous for engaging a broad range of stakeholders and provides an important launch point for the refinement of existing psychometric assessments and the development of new measures to capture the full range of depressive symptom presentation among Black men. In sum, this mixed methods and participatory approach yields a visually descriptive foundation to guide future action-oriented research to support Black men’s mental wellbeing in both community and clinical settings.

Tables and Figures

Table 7.1: Working Definitions, Focal Question, and Rating Questions Used in the Study

Major depressive disorder	A common mental illness characterized by feelings of sadness, loss of interest in daily activities, and other psychological symptoms with a non-physical etiology. The condition ranges in severity and duration.
Depressive symptom	A unique physical or mental feature to characterize depression, such as feelings of sadness, decrease interest in everyday activities, diminished concentration, and fatigue
Usual source of care	A particular doctor's office, clinic, health center, or other place one goes to if one is sick or needs advice about health
Focal question for brainstorming	What are distinct characteristics of depression among Black men? OR Among Black men, one distinct characteristic of depression is ______.
Rating question about usual source of care use	Please rate on a scale of 1-5 how each of these characteristics is related to a Black man's use of a usual source of care (e.g. primary care, clinic, hospital outpatient)

Table 7.2: Cluster Names and Brainstormed Statements

Cluster Name	Statement (#)
Physical States	
	High Blood Pressure (1)
	Self-harm or suicidal behavior (11)
	Binge eating (12)
	Insomnia (37)
	Over-sleeping/Sleeping frequently (38)
	Heart palpitations (48)
	Weight loss (49)
	Weight gain (50)
Diminished Drive	
	Untidy or messy appearance (e.g. home, personal hygiene, etc.) (3)
	Not able to complete tasks (5)
	Not being able to provide for your family (13)
	Not able to complete life goals (e.g. finish school, get a job, travel etc.) (17)
	Excessive substance use (e.g. marijuana, cigarettes, alcohol, etc.) (60)
Social Pressures	
	Not being able to keep up appearances (e.g. different clothes, shoes, etc. than peers) (14)
	Fear of the unknown consequences of today's political environment (22)
	Adherence to norms of competition with other men (e.g. "I have to do better than the other guy") (23)
	Adherence to cultural norms of success and power (e.g. Keeping up with the Joneses, having a large salary, having a high-power job, etc.) (26)
	Constant strain to "do what you have to do to survive" (e.g. support kids, pay bills, etc.) (29)
	Lack of work/life balance (33)
	Ignoring physical symptoms (e.g. injuries, pain, discomfort, etc.) (46)

Cluster Name	Statement (#)
	Excessive engagement in activities that improve outward appearance (e.g. over exercise, overspending, etc.) (61)
	Seeking happiness through accumulated materials (e.g. clothes, shoes, etc.) (62)
	Increased attendance at religious institutions (e.g. church, mosque, etc.) (66)
Communication with Others	
	Unable to communicate properly (e.g. delayed or ignored emails, calls texts, etc.) (2)
	Isolation from others (e.g. friends, family, romantic partners, etc.) (7)
	Discouraging others ("misery loves company") (9)
	Unclear or limited communication (e.g. short verbal responses, unclear body language, etc.) (16)
	Feeling hopeless due to prolonged exposure to state violence against Black people (e.g. police shootings on social media, news coverage, etc.) (20)
	Blunted emotional expression or flat affect (e.g. not crying, no facial changes, etc.) (31)
	Withdrawal from everyday activities (e.g. hobbies, interests, etc.) (34)
	Not able to maintain romantic relationships (41)
	Stuffing down emotions (42)
	Ignoring support from others (45)
	Personality/Mood changes in romantic relationships (51)
	Volatile behavior towards others (52)
	Sharing emotions through indirect forms of communication (e.g. writing long, emotional status updates on social media, letters, emails, etc.) (57)
	Blaming others for issues (58)
	Only reflecting or reminiscing on certain life stages (e.g. adolescence, early adulthood, etc.) (59)
	Change in sexual behavior in relationships (e.g. loss of interest, aggression, etc.) (63)
	Reestablishing relationships with past acquaintances (e.g. friends, romantic partners, etc.) (64)

Cluster Name	**Statement (#)**
	Seeking closure with others/wrapping up loose ends (65)
Emotional States	
	Not able to "get up and go" (4)
	Lack of motivation (6)
	Anger (10)
	Feeling "sick" (15)
	Low self-esteem (24)
	Being stagnant or stuck in life (25)
	Laziness (28)
	Feeling out of control (32)
	Feeling irritated or agitated (35)
	Feeling fatigued (36)
	Feeling hopeless (39)
	Feeling frustrated (43)
	Bursts of crying (44)
	Not feeling like yourself (47)
	Worry (55)
	Anxiety (67)
Internal Conflict	
	Having a pessimistic outlook or negative mindset (8)
	Feeling guilty (18)
	Feeling unqualified (e.g. imposter syndrome) (19)
	Having a heightened sense of fear or dread (21)
	Not feeling supported by the Black community (27)
	Not feeling valued for your work/Not seeing the benefits of hard work over time (30)
	Feeling like things are "off" (40)

Cluster Name	**Statement (#)**
	Feeling attacked/Defensiveness (53)
	Change in mood over time as men age (54)
	Feeling helpless due to the aging process (e.g. increased reliance on assistance from others) (56)
	Numbness, melancholy, or lack of engagement that can be observed by others (e.g. 'There's no joy in your eyes") (68)

Table 7.3: Comparison of Concept Mapping Clusters with Commonly-Used Psychometric Assessments for Depression

	Concept Mapping Clusters							
	Physical States	**Emotional States**	**Internal Conflict**	**Communication with Others**	**Social Pressures**	**Diminished Drive**	**Other concepts not included**	**Items**
Center for Epidemiological Studies Depression Scale (CES-D)	X	X	--	X	--	X		20
Patient Health Questionnaire (PHQ9)	X	X	--	--	--	X	Motor retardation/ hyperactivity	9
Composite International Diagnostic Interview (CIDI)	X	X	X	X	--	X	Motor retardation/ hyperactivity	20
Beck's Depression Inventory (BDI)	X	X	X	X	--	X		21

X: Construct reflected in depression measure

--: Construct absent in depression measure

Figure 7.1: Cluster Map (n=22)

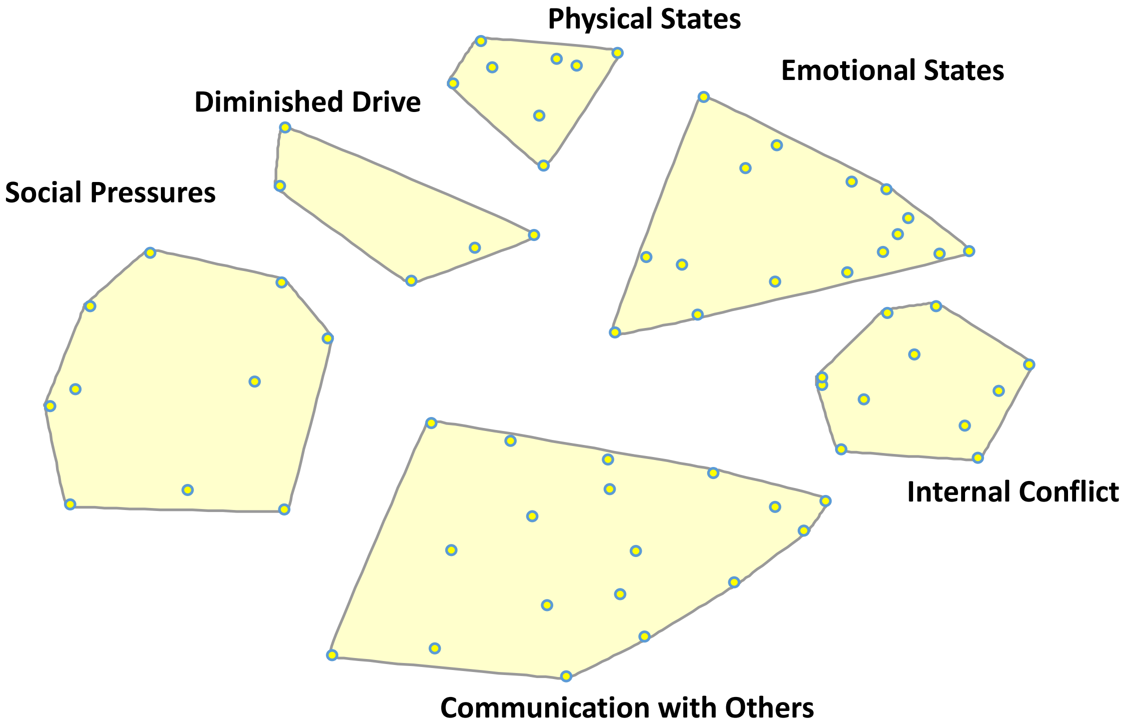


Figure 7.2: Cluster Rating Map (n=22)

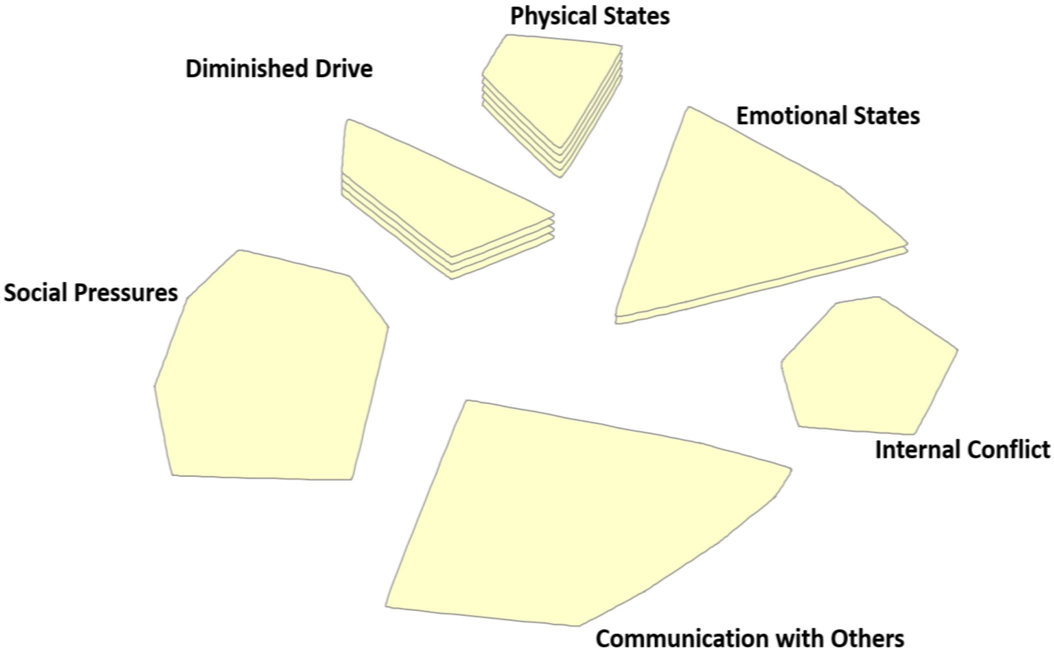


Figure 7.3: Pattern Matching of Cluster Ratings by USOC Status (n=22)

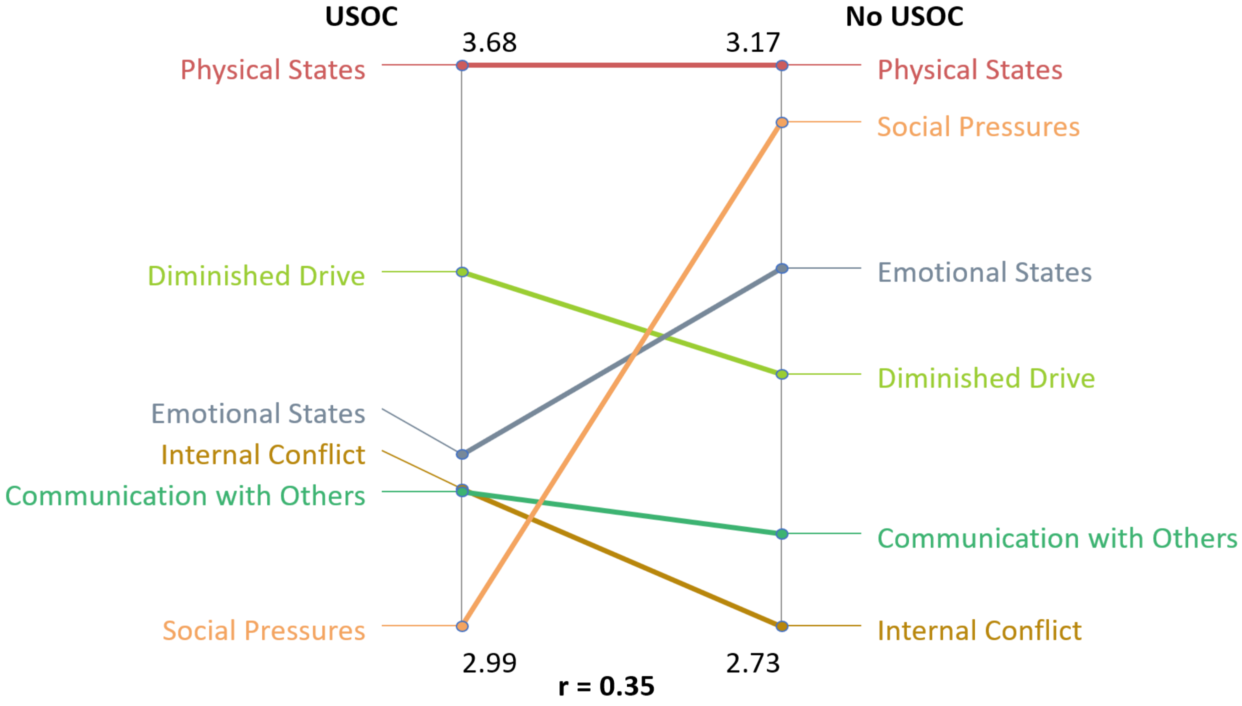


Figure 7.4: Pattern Matching of Cluster Ratings by Employment Status (n=22)

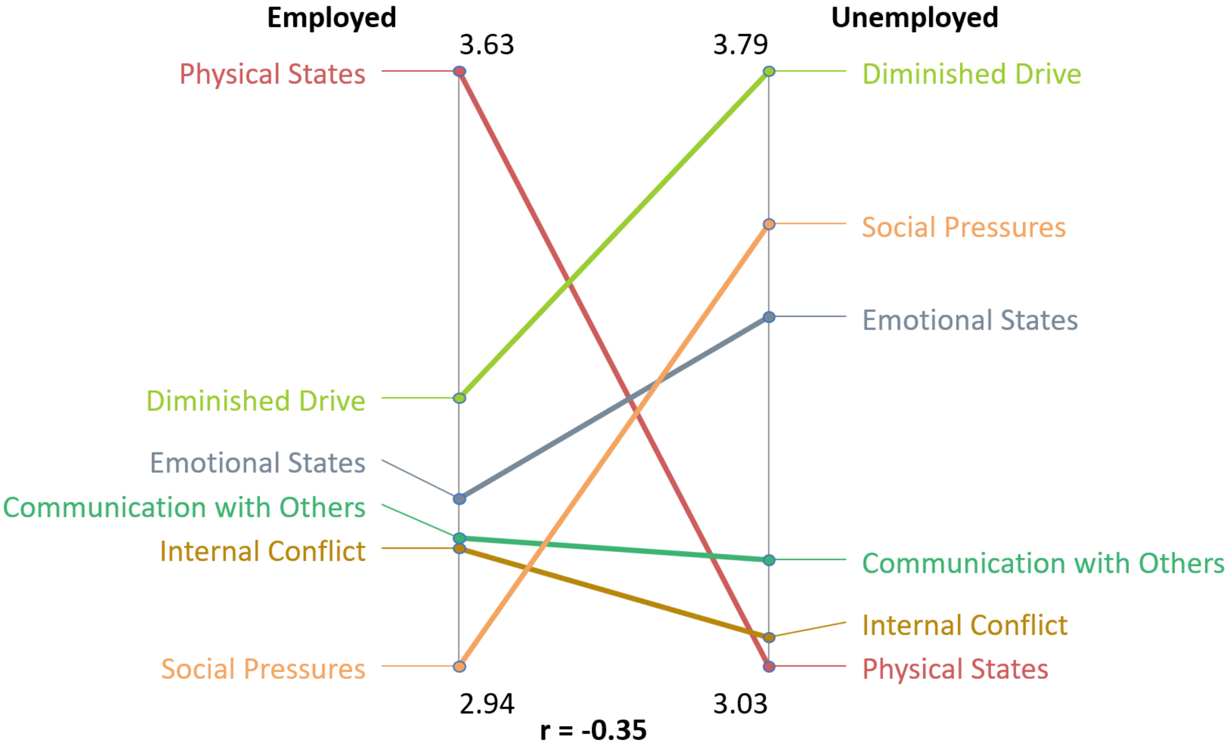
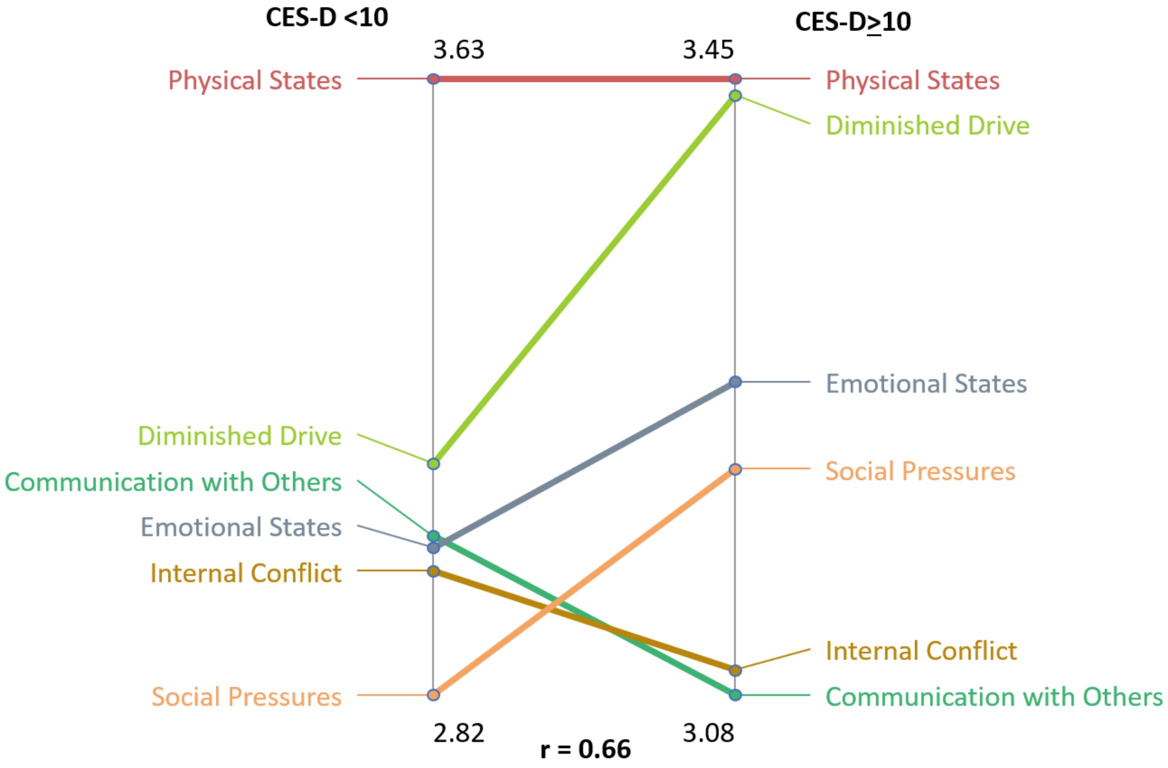


Figure 7.5: Pattern Matching of Cluster Ratings by CES-D score



CHAPTER 8: CONCLUSION

Summary of Dissertation Findings

The goal of this dissertation was to examine depressive symptomatology and its association of usual source of care status among Black men. The use of a concurrent triangulated mixed methods design allows researchers to corroborate findings across studies and address limitations found in single-method analyses. This study design was selected to evaluate complementary analytic approaches that answer the central research question: *How does depressive symptomatology influence usual source of care acquisition among Black men?* Aim 1 and Aim 2 (Chapter 5 and 6) presented the analysis of this research question using structural equation modeling, whereas Aim 3 (Chapter 7) utilized a concept mapping approach. In all, synthesized findings yield a concordant depiction of which depressive symptom cluster are associated with health care engagement in the lives of Black men.

The first manuscript (Chapter 5) explored and confirmed the factor structure of the CES-D in a community sample of Black men. This study also evaluated reliability estimates of the scale and examined item-to-total correlations by item. Two factors were retained from the EFA study, interpersonal negative affect and diminished positive affect. Additionally, EFA results supported the removal of the “effort” item due to poor factor loading and weak correlation with the total CES-D scale. CFA results confirmed the retained two-factor, 11-item measure had the best model fit compared to two-factor models that included the “effort” item and the hypothesized three-factor model.

The second manuscript (Chapter 6) built on findings from the previous study to determine depressive symptom factors associated with usual source of care status among Black men. This study empirically assessed pathways from four integrated theoretical frameworks to understand relationships using a latent moderated structural equation model approach. Results revealed that the INA factor was the only significant depressive symptom cluster present in this association. Thus, I concluded that Black men with more INA-related symptomatology are less likely to report having a usual source of care. I then tested a latent moderated structural equation model that assessed psychosocial race and gender-related moderators (racial centrality, John Henryism, restrictive emotionality, and masculine role norms salience) in the depressive symptom-USOC relationship. Results from this study yielded no significant results in the adjusted latent SEM model. This finding suggests that race and gender-related factors may not modulate the depression-USOC relationship among Black men in ways that were hypothesized for this study.

In the third manuscript (Chapter 7), I used concept mapping methodology to elicit stakeholder-driven perspectives of Black men’s depressive symptomatology and usual source of care status. For this study, I recruited Black men, Black women, and primary care providers to engage in a three-part study centered on the focal question, “What are the distinct characteristics of depression among Black men?”. Black male participants also engaged in sorting and rating statements generated from the focal question to yield an illustrative representation of how depressive symptom clusters are differentially related to USOC use. Findings yielded six distinct conceptual clusters related to depression among Black men. Additional analysis revealed that cluster ratings differed by demographic status, with variations in ratings by employment status, CES-D score, and USOC status.

Synthesis of Findings Across Aims

Depressive symptomatology and USOC status

Results from both studies reveal the constellation of depressive symptoms that may be most salient to Black men's usual source of care status. First, Aims 1 and 3 established that clustered symptomatology among Black men is grouped in ways that is not comprehensively described in extant literature. These parallel conclusions were reflected by the negative association between the INA factor and USOC status (Figure 6.2) and the relative insignificance of the *communication with others* and *emotional states* clusters to USOC use (Figure 7.2), respectively. Previous studies confirming the factor structure of the CES-D measure found that the scale does not provide consistent results across racial and ethnic groups (Kim et al., 2011). CFA results build on this conclusion by highlighting the ways in which symptomatology among community-dwelling Black men is culturally distinct from other demographic groups, including Black women, men of diverse backgrounds, and even elderly Black male patient populations (Callahan & Wolinsky, 1994; Long Foley et al., 2002). Concept mapping findings further emphasized the extent to which Black men differentially articulate this experience from what is captured in the current CES-D scale and other established measures. Collectively, both studies reveal that Black men who display fragmented interpersonal relationships coupled with hallmark signs of depressed mood (e.g. crying, sadness, etc.) may experience greater challenges to engaging with a regular health care provider.

Additionally, concept mapping addressed limitations of the confirmatory factor analysis, which evaluated an abbreviated CES-D measure. By eliciting perspectives directly from Black men, I was able to capture somaticized symptoms that was omitted in quantitative measures used in Aim 1. These items were reflected in the *physical states* cluster, which was rated as most important for seeking care via USOC across multiple demographic factors (Figures 7.2, 7.3, and

7.5). These findings are consistent with prior research citing depression somatization as a catalyzing feature of health care utilization (L. J. Kirmayer et al., 1993; Shacham et al., 2008). Yet, less is known about which physical symptoms indicate underlying mental health challenges for Black men in the clinical setting. Items from the *physical states* cluster may offer some insight by identifying high blood pressure (item #1) and heart palpitations (item #48) as a function of depressed mood, but more conclusive evidence is needed to establish the clinical validity of these findings. Thus, future research should continue to assess which physical manifestations of the depression experience operate as signals for medical help-seeking.

Perceptions of effort

A second point of synthesis is the intricate ways that effort was characterized in both studies. Aim 1 revealed that “I felt everything I did was an effort” was a factorially complex item in the CES-D scale, due to suboptimal item-to-total correlations and cross-loadings in both the INA and DPA factor. As a result, the item was removed from the overall CES-D measure to provide a stronger structural model for subsequent phases of analyses. Aim 2 determined that John Henryism, a measure of prolonged effortful coping, was not a significant moderator of the depressive symptom-USOC relationship. The concept mapping study obtained similar complex findings through Black men’s discussion of the challenges experienced in the home and work setting. Participants had varied characterizations of effort as evidenced by brainstormed statements such as “constant strain to do what you have to do to survive” (Item #29) and “not feeling valued for your work” (Item #30), which were positioned in the *social pressures* and *internal conflict clusters,* respectively.

Collectively, these findings suggest that single item or unidimensional measures of effort may not capture the sensitivity of this construct in Black men’s daily lives. In particular, concept mapping items described above highlight the pressure that exists when men strive to meet gendered expectations within the household while simultaneously experiencing diminished upward mobility. This form of marginalized masculinity has been most extensively assessed through John Henryism, with previous studies expansively citing the deleterious mental and physical ramifications of high effort activity (Matthews et al., 2013; Neighbors et al., 2007; Powell et al., 2016). However, findings from this dissertation suggest the need for future research establishing the multidimensional pathways that effort is experienced by Black men and its subsequent impact on health care engagement.

Psychosocial moderators in the depressive symptom-USOC relationship

Finally, results from the latent moderated approach (Aim 2) yielded no significant psychosocial moderators in the relationship between depressive symptomatology and USOC status. Given that this is the first study to jointly examine these moderators, it is possible that these measures drive the depressive symptom-USOC relationship through other indirect pathways. Informal group dialogue during the concept mapping study may pinpoint which constructs to address in future studies. During brainstorming and interpretation session discussions, Black men articulated feelings of distrust towards the health care system which was attributed to sociohistorical experiences with racism in this setting. This exchange, albeit brief, exposes structural aspects of health care delivery that may be negatively perceived by Black men. One recent study assessed racial centrality in the health care context and found that individuals with higher centrality were more likely to perceive discrimination in the health care system and, in turn, reflected more medical mistrust than those with low centrality (Cuevas & O'Brien, 2017). In light of this research and results from the dissertation study, additional research is needed to determine the extent to which racial identity and mistrust shapes Black men's experience of mental health care delivery.

Strengths and Limitations

Analytically, there are limitations to the overall study that may influence complete generalizability of my findings. First, the cross-sectional nature of the AAMHSL dataset used in Aims 1 and 2 gives little support for temporal pathways in the proposed relationship between depressive symptomatology and USOC acquisition. Next, findings from the quantitative study are limited by use of the abbreviated measure of depressive symptomatology (CES-D 12-item), which does not assess the full range of symptomatology as reflected in the original, 20-item measure (Radloff, 1977). However, the 12-item version of the CES-D has been shown to capture an adequate range of symptomatology among diverse racial and ethnic communities (Assari & Moazen-Zadeh, 2016; Kim et al., 2009; Kim et al., 2011). Moreover, identified gaps associated with the abbreviated measure were addressed using the concept mapping approach, which yielded a more diverse range of symptomatology beyond the original four-factor classification (Radloff, 1977).

Despite these limitations, findings from this dissertation are strengthened by the integration of multiple methodological and theoretical frameworks to produce novel understandings of depressive symptomatology among Black men. First, the examination of within-group differences among Black men further explains drivers of health care inequities that are beyond extant Black-White comparative analyses (Kim et al., 2011). The strength of this approach is important for identifying opportunities to effectively engage Black men in tailored and culturally-specific mental health promotion efforts. Second, the use of the concurrent triangulation procedure allows for integration of multiple methodological approaches to address a singular phenomenon of interest (Creswell & Creswell, 2017). Finally, findings from Aim 3 are bolstered by the involvement of the Community Advisory Board (CAB) comprised of stakeholders who were able to participate actively throughout the concept mapping study. Drawing on their lived experience as Black men or health care providers, the CAB provided critical contextualization of concept mapping results. This insight was invaluable in substantiating whether the information gathered truly captured perspectives through the Black male lens. Finally, the CAB members were instrumental in providing action-oriented dissemination strategies that will extend the impact of this research beyond academia.

Implications

This dissertation study extends our understanding of evidence linking depression and health care access among Black men in important ways. First, this research is the first, to my knowledge, to identify a broader range of clustered depressive symptomatology associated with USOC status using two distinct methodological approaches. Much of the evidence assessing diminished health care use as a function of depression have examined this phenomenon through a unidimensional lens. As such, extant literature has not captured the importance of varied manifestations of depressed mood and its impact in the clinical setting. Moreover, this study is the first to identify which symptoms present the greatest barriers to Black men's health care use. By doing so, results highlight important areas of emphasis for future intervention studies. For researchers, results may drive modification of existing psychometric assessment tools to capture gendered nuances of depressive symptom presentation. Clinicians can also adopt findings to create quality-improvement interventions aimed at incorporating culturally-specific practices into health care delivery that may promote sustained engagement of Black men. Finally, by understanding which symptoms present the greatest barrier to sustained linkages to the health care system, interventionists may leverage results to create effective public health campaigns aimed at increasing preventive health services access among Black men.

By using complementary approaches to understand clustered symptomatology among Black men, the dissertation study also provides insights as to which treatment strategies may yield the greatest therapeutic effect among Black male patients. One previous study has examined the extent to which clustered symptoms inform effective depression treatments among psychiatric patients (Schacht, Gorwood, Boyce, Schaffer, & Picard, 2014). However, there is limited research to date on how these clusters may influence other aspects of the mental health care continuum, such as screening, diagnosis, or treatment preferences. Thus, as the provision of health care services becomes more patient-centered, understanding how gender and race operate in the mental health care setting will need to be prioritized to ensure that culturally-sensitive treatments are available for Black male patients.

Overall, the findings from this study advances understanding of the extent to which depressive symptoms, as experienced by Black men, are associated with reporting and utilizing a usual source of care. The knowledge gained in this body of work highlights the unique nuances of the depression experience that are informed by race and gender. Examinations of these pathways are of critical importance for understanding how decisional processes may be influenced prior to entering the doctor’s office for a health need. Taken together, findings from my dissertation have potential to build better therapeutic alliances between health systems and Black male patients, inform improvements to health care delivery, and generate sustained multilevel interventions to reduce health disparities in this population.

APPENDIX A: AAMHSL STUDY VARIABLES (AIM 1 AND 2)

Variable name	Variable Name	Sample Question	Response categories
HCA2A	Usual Source of Care (USOC)	“Is there a particular person or place (e.g. doctor’s office, clinic, health center, or other place) that you usually go to if you are sick or need advice about your health?”	0=No 1=Yes
CESDA-CESDL	Depressive Symptoms (12 items)	“I have trouble keeping my mind on what I was doing”	0=Rarely or none of the time (less than 1 day) 1= Some or a little of the time (1-2 days) 2=Occasionally or a moderate amount of the time (3-4 days) 3=Most or all of the time (5-7 days)
JHAC	John Henryism Scale for Active Coping	“When things don’t go the way I want them to, that makes me work even harder”	1= Completely False 2= Somewhat False 3=Don’t Know 4=Somewhat True 5=Completely True
MIBI	Racial Centrality	“In general, being Black is an important part of my self-image”	1=Strongly Disagree 2=Disagree 3=Slightly Disagree 4=No Opinion 5=Slightly Agree 6=Agree 7=Strongly Agree
MAN	Masculine role norms salience Inventory-Salience	“How important are the following characteristics (e.g. being strong in control in a relationship, and independent) to your beliefs about what it means to be a man?	1=Not important at all 2=A little important 3=Somewhat important 4=Quite important 5=Extremely important

Variable name	**Variable Name**	**Sample Question**	**Response categories**
MRNI	Masculine role norms salience Inventory-Restrictive Emotionality	“A man should never reveal worries to others”	1=Strongly Disagree 2=Disagree 3=Slightly Disagree 4=No Opinion 5=Slightly Agree 6=Agree 7=Strongly Agree

APPENDIX B: AAMHSL CONTROL VARIABLES (AIM 2)

Variable name	Variable Name	Sample Question (if applicable)	Response categories
AGEYRS	Participant age	What is your age (in years)	Continuous
BackF	Education status	What is the highest level of education that you completed?	Recoded as: 0= ≤ High School 1=Some college 2=College or Graduate/Professional Degree
HCA1A	Insurance status	Do you have any kind of coverage, including health insurance, prepaid plans such as HMOs or government plans such as Medicare?	0=No 1=Yes
BackL	Participant relationship status	What is your relationship status?	Recoded as 0=Single 1=Married
BackI	Employment status	What is your employment status?	Recoded as 0=unemployed 1=employed part time 2=employed full time

APPENDIX C: WORKING DEFINITIONS, FOCAL QUESTION, AND RATING QUESTIONS USED IN CONCEPT MAPPING STUDY (AIM 3)

Major depressive disorder	A common mental illness characterized by feelings of sadness, loss of interest in daily activities, and other psychological symptoms with a non-physical etiology. The condition ranges in severity and duration.
Depressive symptom	A unique physical or mental feature to characterize depression, such as feelings of sadness, decrease interest in everyday activities, diminished concentration, and fatigue
Usual source of care	A particular doctor's office, clinic, health center, or other place one goes to if one is sick or needs advice about health
Preventive health services	Routine health care (e.g. check-ups, screenings, and immunizations) to prevent illness, disease, and other health-related problems
Focal question for brainstorming	What are distinct characteristics of depression among Black men? OR Among Black men, one distinct characteristic of depression is ______.
Rating question about usual source of care	Please rate on a scale of 1-5 how each of these characteristics is related to a Black man's use of a usual source of care (e.g. primary care, clinic, hospital outpatient)
Rating question about mental health service use	Please rate on a scale of 1-5 how each of these characteristics is related to a Black man's use of specialty mental health services (e.g. through a psychiatrist, psychologist, or clinical social workers)
Rating question about non-clinical help-seeking	Please rate on a scale of 1-5 how each of these characteristics is related to a Black man's use of social support networks (e.g. friends, spouse/partner, clergy/spiritual counselor)?

APPENDIX D: COMMUNITY ADVISORY BOARD ROSTER

James Tabron, Assistant Register of Deeds, Durham County Government

Leron Jackson, MD: Primary Care Provider serving the Durham, North Carolina area

Barry Archer: Barak Source for Learning

APPENDIX E: INFORMED CONSENT FOR CONCEPT MAPPING STUDY

Principal Investigator: Leslie Adams, MPH

Overview of study: This study examines conceptualizations of depressive symptomatology and its contribution to acquiring a usual source of care (USOC) among Black men. As part of this study, we are hoping you would be willing to provide your feedback on how depression is experienced among Black men and its influence on engagement with the health care system. This feedback will be assessed using a three-part process called concept mapping. During this process, we will generate ideas about the research question, sort these ideas into groups, and rate these ideas by importance to seeking care through various avenues (e.g. USOC, mental health provider, or family/friends). Before agreeing to take part in this study, it is important that you read the information provided in this information sheet. It includes details we think you need to know to decide if you wish to take part in the study. If you have any questions, please ask a staff member or study investigator.

Description of Brainstorming: If you agree to participate in this study, you will be asked to take part in a brainstorming session. Approximately 30 participants will be involved in the brainstorming sessions. You will be asked to answer a single question and give as many answers to the question as you would like. You can take part in the discussion sessions in one of 2 ways:

1. Group Discussion Session: Study Investigators and/or Staff Members will facilitate a group discussion session. You will also be asked to complete a demographic survey. This could take up to 1 hour. Participants will receive incentives for their contributions.
2. Online: You will be provided with a link to our website. You would then create a user ID and password to complete the brainstorming session. You will be asked to complete a demographic survey. This would take approximately 10 minutes to complete.

Description of Sorting and Rating: If you agree to continue as a participant of the study, you will be asked to take part in a sorting and rating session. Approximately 30 participants will be involved in this activity. You will be asked to group statements into groups based on conceptual similarity. You will then be asked to rank each of these statements based on its importance to Black men's health care access. Similar to the brainstorming session, you can participate in this activity either online or in-person.

Should you be interested in taking part in other discussion sessions we will ask you to provide your contact information.

Potential Risks: We are not asking about your personal experiences, only your opinions of depression among Black men. As such, we know of no direct risks to you. Due to the nature of in-person discussion, there is a risk regarding breach of confidentiality among participants in the group. To reduce this risk, we ask that you please not discuss anything from the session outside of the research setting. For online participants, there is a foreseeable discomfort/risk regarding breach of confidentiality with respect to using the internet as a tool for the research, as the Internet is not a secure medium, and transmission of data may be vulnerable. In order to protect your privacy, the host will not retain identifiable data. Online responses will be transmitted using secure data transfer protocol; the stored data will be protected from unauthorized access and will not be traceable back to the computer.

Potential Benefits: While we know of no direct benefits to you taking part in the brainstorming sessions, your knowledge about these issues will help inform improvement of preventive health services for Black men.

Confidentiality and Privacy: The PI is committed to respecting your privacy. Every effort will be made to keep your study information private and confidential in accordance with all applicable privacy legislations. No information that reveals your identity will be published without consent unless required by law.

While you are encouraged not to reveal information that could directly identify yourself, or others, should you reveal any identifiable information during the discussion, this information will not be used, but rather paraphrased to capture the idea/thought expressed. Identifying information will be securely stored at UNC Chapel Hill, and accessible only to members of the research team and the UNC Research Ethics Board, who may review study records (such as the consent form), for the purpose of monitoring the study. No information identifying you will be transferred outside the site of this study.

The results of the research will include information from many people grouped together so that no one person can be identified. For example, we might use a quote by you and say in publication that the quote was from someone with your perspective. Any responses, records or personal information that could be directly linked to you will not be reported or shared with anyone outside of the study team.

Publication of Results: The results of this study will be presented in publications and presentations. No information that reveals your identity will be published in any capacity.

Participation and Withdrawal: Participation in this research study is voluntary. You can refuse to participate in this study or leave this study at any time. If you decide to participate in this study you can change your mind without giving a reason, and you may decline to answer any question during that interview. If you choose to no longer take part in the study, the information you had provide will be remove from the study and destroyed.

Your consent to participate in this brainstorming, rating, or sorting session is implied by you continuing to take part in the concept mapping activities.

Institutional Review Board Contact Information: If you have additional questions regarding your right as a research participant, please contact the UNC Chapel Hill Institutional Review Board at (919) 966-3113 or by email at irb_questions@unc.edu. Our study ID is 17-1970.

Study contact: If you have any questions or concerns, please do not hesitate to contact Leslie Adams at adamslb@live.unc.edu.

Please keep a copy of this document for your records.

APPENDIX F: DEMOGRAPHIC SURVEY FOR CONCEPT MAPPING SURVEY

Q1. Study ID

Q2. Email address

Q3. Phone number

Q4. Please select your age category

18-24 (1)

25-29 (2)

30-39 (3)

40-49 (4)

50-59 (5)

60+(6)

Q5. Gender

Male (1)

Female (2)

Q6. Which of the following best describes your race/ethnicity (Choose One)

African American/Black (1)

Caribbean (2)

Afro-Latino (3)

Continental African (4)

Bi-racial (5)

Other (6)

Q7. What is your relationship status?

Single/never married (1)

Unmarried/living with someone (2)

Married (3)

Divorced (4)

Widowed (5)

Q8. What is your employment status?

Employed **full time** for wages (1)

Employed **part time** for wages (2)

Full time/part time student (3)

Self-employed (4)

Unemployed (5)

Q9. If you are currently employed, what is your occupation? ________________

Q10. If you are currently unemployed, how long have you been unemployed? ________________

Q11. Is there a particular person or place (e.g. doctor's office, clinic, health center, or other place) that you usually go to if you are sick or need advice about your health?

Yes (1)

No (2)

Q12. Do you have any kind of coverage, including health insurance, prepaid plans such as HMOs or government plans such as Medicare?

Yes (1)

No (2)

Q13

Please tell me how often you have felt this way during the past week	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
a) I felt that I was just as good as other people	0	1	2	3
b) I had trouble keeping my mind on what I was doing	0	1	2	3
c) I felt depressed	0	1	2	3
d) I felt that everything I did was an effort	0	1	2	3
e) My sleep was restless	0	1	2	3
f) I was happy	0	1	2	3
g) People were unfriendly	0	1	2	3
h) I enjoyed life	0	1	2	3
i) I had crying spells	0	1	2	3
j) I felt that people disliked me	0	1	2	3
k) I could not get “going”	0	1	2	3
l)I felt hopeful about the future	0	1	2	3

APPENDIX G: MODERATOR'S GUIDE FOR CONSENT MAPPING BRAINSTORMING

****Note:** Confirm attendance with attendees by phone or email ~3 days prior to the session. Include consent form via email to review prior to the session. **

Session Materials

- Focal question on large newsprint or projected on screen
- Sufficient copies of consent form (2/person)
- Sufficient number of demographic surveys
- Paper and pens
- Sign-in sheet
- Name tags
- Dry-Erase markers and Flipchart (optional)
- Laptop for projection (optional)
- Notecards
- Refreshments
- Reimbursement/Incentives (1/person)
- Resource list for participants to take (if appropriate)
- Sign-up sheet for permission to contact re: next steps (best way to contact, etc.)
- Audio recorder and batteries (check out from HB ~2-3 days in advance)

Prepping room for Brainstorming

- Write out focal question on whiteboard/projector for participants
- Have name tags, sign-in sheet, notecards/pens and consent forms at each seat
- Set out food in another section
- Create circle with chairs, if not already set up
- Set up log for receipt of reimbursement

Agenda

Welcome/ Overview of Topic/Ground Rules

- Introduce yourself
- Thank them for their participation in the group
- Introduce other research team and role throughout the session
- Discuss payment (if participants will receive a monetary incentive)

Provide a summary of the dissertation project

This project is part of my dissertation study how depression influences health care use among Black men. My goal is to understand how depression is conceptualized, particularly among black men, who have the lowest prevalence of depression among all racial/ethnic and gender groups. I want to gauge our direct perspectives, as Black men, women, and health care providers to understand how these symptoms influence preventive health care access.

Explain Brainstorming Purpose

Today, you will be asked to participate in a brainstorming session. We want to hear all your ideas. There are no right or wrong answers. This should take anywhere between 45 minutes to 1 hour of your time. You will be asked to answer a single question and give as many answers to the question as you would like. The goal is to generate as many informative responses to the focal question as possible. My role as the moderator will be to keep the flow of ideas going, to clarify statement when necessary, to encourage participation from everyone at the table, and to ensure that the group is answering the focal question. The brainstorming session will be recorded on an audiotape and it will be erased after the information has been compiled.

Distribute and review consent form

Does anyone have any questions so far?

If we can continue then, let me tell you that your consent to participate in this session is implied by your staying here for this group activity.

Establish Ground Rules

- Allow/encourage everyone to participate
- Remember that disagreement is OK
- Please turn cell phone ringers off or to vibrate
- Speak one at a time
- Speak loudly and clearly
- There are no right or wrong answers
- Please be respectful of the other participants
- Respect confidentiality of the group
- Free to leave at any time if needed

Is everyone alright with that? Then let's continue

TURN ON RECORDER

Icebreaker Discussions/Introductions

- Participants will introduce themselves by discussing their favorite artist name and a song from that artist that describes them (or their experiences)

Introduce working definitions

Depression	A common mental illness characterized by feelings of sadness, loss of interest in daily activities, and other psychological symptoms with a non-physical etiology. The condition ranges in severity, duration, and presentations.
Depressive symptoms	A unique physical or mental feature to characterize depression.
Usual source of care	A particular doctor's office, clinic, health center, or other place one goes to if one is sick or needs advices about health
Preventive health services	Routine health care (e.g. check-ups, screenings, and immunizations) to prevent illness, disease, and other health-related problems

READ OUT FOCAL QUESTION, BEGIN BRAINSTORMING

“What are unique characteristics of depression among Black men?”

Notecard exercise

Please take some time and jot down some answers on your notecards. We’ll take ~2 minutes to work on this individually. Then, we’ll come together as a group and discuss it.

PAUSE 2-3 MINUTES.

Discussion

- Ask for volunteers to share comments on the notecard
- Ask for clarity when needed
- Engage other participants with similar/different answers

End discussion after ~1 hour

- Thank participants for their time

END RECORDING

Facilitate distribution of gift cards

APPENDIX H: MODERATOR'S GUIDE FOR SORTING AND RATING SESSIONS

Session Materials

- Focal question on large newsprint or projected on screen
- Sufficient copies of consent form (2/person)
- Sufficient number of demographic surveys
- Paper and pens
- Sign-in sheet
- Name tags
- Dry-Erase markers and Flipchart (optional)
- Laptop for projection (optional)
- Refreshments
- Reimbursement/Incentives (1/person)
- Resource list for participants to take (if appropriate)
- Sign-up sheet for participants that would like to continue project participation
- Audio recorder and batteries (check out from HB ~2-3 days in advance)
- List of items and focal question
- Sufficient number of statement card decks
- Sufficient number of pile sorting forms
- Sufficient number of rating forms (different questions in different colors)
- Rubber bands, paper clips, pens (for each participant)

Prepping room for Brainstorming

- Write out focal question on whiteboard/projector for participants
- Have name tags, sign-in sheet, and consent forms at each seat
- Set out food in another section
- Set up log for receipt of reimbursement

Welcome/ Overview of Topic/Ground Rules

- Introduce yourself
- Thank them for their participation in the group
- Introduce other research team and role throughout the session
- Discuss payment (if participants will receive a monetary incentive)
- Ask participants to complete name tents or tags with any desired name

Explain Sorting and Rating

Today, you will be asked to participate in up to two activities, one is called "sorting" and one is called "rating". Sorting involves arranging items into categories that make sense to you. There are no right or wrong answers and you'll do your own work. We will give you as much time as you need to sort the piles, but typically it takes 30 minutes to 1 hour of your time. The second task is to rate these items on a scale from 1 to 5, indicating A) how each thing contributes to Black men's use of usual source of care B) Which things might influence Black men's use of specialty mental health services C) Which of these things influence Black men's use of social networks. This activity will take about 15 minutes. You will also fill out a short demographic survey. It has a study ID number to ensure that your responses are anonymous. We can assure you that your responses to these questions will not be used to identify you personally. They will only be used to compare sorting and rating by different groups, for example, by age or gender. We've give you an information sheet that explains what is going to happen today—that is the steps, how long it will take and that your participation is voluntary.

The first task involves sorting these same statements into different groups. So, your task is to sort these cards into piles that make sense to you. Make sure each pile has a label on it. Once you have your piles, fill out the "pile data entry sheet" with the name of the pile, and the item numbers that you've put in each pile. This is an individual exercise, so please do not talk to anyone while sorting your piles and filling in your form.

[WHEN PARTICIPANT RETURNS WITH THE COMPLETED SORTING FORM AND DEMOGRAPHIC
SURVEY]

Before doing your ratings, quickly scan the entire list of statements to try to get an idea of which ones are highest and lowest priority within the set based on the rating question asked. Then, when you rate the statements, try to use the full range of rating values (e.g., 1 to 5). If you have any questions please put up your hand and someone will come and help you.

APPENDIX I: SORTING SHEETS FOR IN-PERSON SESSIONS

1	Pile name:							Total # of items:
List item #s								

2	Pile name:							Total # of items:
List item #s								

3	Pile name:							Total # of items:
List item #s								

4	Pile name:							Total # of items:
List item #s								

5	Pile name:							Total # of items:
List item #s								

6	Pile name:							Total # of items:
List item #s								

7	Pile name:							Total # of items:
List item #s								

8	Pile name:							Total # of items:
List item #s								

APPENDIX J: RATING SHEETS FOR IN-PERSON SESSIONS

Participant Instructions : Using the rating scale provided, please circle the rating value for each individual statement based on the rating question below. Ensure that you circle only one value for each statement and that each statement is rated prior to submitting your rating sheet.

Below is a list of things that have been identified as unique characteristics of depression among Black men. Please rate each item according to its relative importance to Black men's use of a usual source of care (e.g. primary care, clinic, hospital outpatient) compared to other items on this list.

Rating Scale:
1-Relatively unimportant
2-Somewhat important
3-Important
4-Very important
5-The most important thing influencing use of a usual source of care among Black men

Rating Scale					**Statement**
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

Rating Scale					**Statement**
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

Participant Instructions : Using the rating scale provided, please circle the rating value for each individual statement based on the rating question below. Ensure that you circle only one value for each statement and that each statement is rated prior to submitting your rating sheet.

Below is a list of things that have been identified as unique characteristics of depression among Black men. Please rate each item according to its relative importance to Black men's use of a specialty mental health services (e.g. psychiatrist, psychologist, clinical social worker, etc.) compared to other items on this list.

Rating Scale:
1 – The most important thing influencing use of specialty mental health care among Black men
2 – Very important
3 – Important
4 – Somewhat important
5 – Relatively unimportant

Rating Scale					**Statement**
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

Rating Scale					**Statement**
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

Participant Instructions : Using the rating scale provided, please circle the rating value for each individual statement based on the rating question below. Ensure that you circle only one value for each statement and that each statement is rated prior to submitting your rating sheet.

Below is a list of things that have been identified as unique characteristics of depression among Black. Please rate each item according to its <u>relative importance to Black man's use of social support networks</u> (e.g. friends, spouse/partner, clergy/spiritual counselor) compared to other items on this list.

Rating Scale:
1 – The most important thing influencing use of specialty mental health care among Black men
2 – Very important
3 – Important
4 – Somewhat important
5 – Relatively unimportant

Rating Scale					**Statement**
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

Rating Scale					**Statement**
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

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