EMOTIONAL DETERMINANTS OF HEALTH: EXPLORING PREVALENCE AND THE IMPACT OF ADVERSE CHILDHOOD EXPERIENCES ON PHYSICAL AND MENTAL HEALTH OUTCOMES OF BLACK ADULT MEN USING THE 2012 BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

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ABSTRACT

Background. In the United States, Black men face a disproportionate burden of preventable mortality and morbidity rates. Among the possible factors associated with the disproportionality in these rates among Black men, studies suggest, are adverse childhood experiences (ACEs). Moreover, depression, one of the world's most pervasive psychiatric disorders, researchers suggest, also contributes to disparate mortality and morbidity rates among Black men.

Purpose. The purpose of this study and research inquiry was to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions, and behavioral health risks using the 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

Methods. A secondary data analysis was employed using a community sample of 3,084 Black men originating from the 2012 BRFSS. The 2012 BRFSS included an ACE module questionnaire. ACE module survey questions were used to determine the presence (yes/no) for types (e.g., direct or environmental) of ACEs. Composite measures of the ACE type subscales were computed to determine the total number of ACEs that could be reported (e.g., range 0 to ≥ 5). Additional BRFSS questions assessed depression, chronic medical conditions, and health risk behaviors.

Results. Physical abuse, a direct ACE, and household member incarceration, an environmental ACE, was significantly associated with current depressive symptoms. Approximately 32.1% of Black men reported exposure to verbal abuse before age 18, the most

prevalent direct ACE. In contrast, a larger proportion (48.6%) of Black men reported exposure to divorce before 18, the most prevalent environmental ACE. Physical abuse and stroke were statistically significant (OR = 4.14; 95% CI [1.69, 10.12]; $p < 0.05$). Approximately 9.2% of the Black men in the study reported experiencing five or more ACEs. Health risk behaviors did not mediate depression among Black men.

Conclusion. Physical abuse and household member incarceration exert a significant impact on current depression. Indeed, verbal abuse and divorce demonstrated a significant relationship with a lifetime diagnosis of depression. The study findings have implications for health education practitioners, researchers, and policymakers interested in improving mental health through prevention and reducing childhood exposure to abuse.

DEDICATION

I would like to dedicate my dissertation to Nigel Shelby. Nigel, you took up space in a short 15 years showing every Black, gender non-conforming, non-binary, queer, love-abiding family member what sunshine looks like in human form. May your life remind us all of the importance of affirming Black LGBTQ youth, fostering safe and inclusive spaces for them, and prioritizing their mental health. Rest in Power.

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LIST OF ABBREVIATIONS AND SYMBOLS

ACEs	Adverse Childhood Experiences
BFS	Bowen Family Systems Theory
BRFSS	Behavioral Risk Factor Surveillance System
CATI	Computer Assisted Telephone Interviewing
CDC	Centers for Disease Control and Prevention
EDOH	Emotional Determinants of Health
IRB	Institutional Review Board
MDD	Major Depressive Disorder
MSG	Marketing Systems Group, Inc.
NIS	National Incidence Study of Abuse and Neglect
NSAL	National Survey of American Life
ODPHP	Office of Disease Prevention and Health Promotion
PDOH	Political Determinants of Health
RQ	Research Question
SBM	Strong Black Man Ideology
SPSS	Statistical Package for the Social Sciences
SDOH	Social Determinants of Health

USDHHS	United States Department of Health & Human Services
df	Degree of Freedom
N	Participants in the total sample
n	Participants in a portion of the sample
M	Arithmetic Mean
p	P-value: probability associated with the occurrence under the null hypotheses of a value of extreme as or more extreme than the observed value
SD	Standard Deviation
%	Percent
<	Less than
>	Greater than
=	Equal to

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CHAPTER 1

INTRODUCTION

Mental disorders are the leading cause of disability, accounting for nearly 19% of all years of life lost to disability and premature mortality, according to Healthy People 2020, (Brown et al., 2009; Kelly-Irving et al., 2013; US Burden of Disease, 2013). Mental health, defined as a state of well-being in which individuals realize their abilities, work productively, cope with normal stressors, and make contributions to their community, is recognized as an essential component to overall health (Centers for Disease Control and Prevention, CDC, 2013a). Mental illness is defined as alterations in thinking, mood, and or behavior and is defined collectively as diagnosable mental disorders associated with distress and or impaired functioning (CDC, 2013a).

Depression, set to be the second leading contribution among the global burden of disease, is the most common type of mental illness (National Institute of Mental Health, NIMH, 2017; World Health Organization, WHO, 1996). Depression affects approximately 17.3 million American adults, or about 7.1% of the United States adult population, age 18 or older, each year (NIMH, 2017). Depression, is defined as persistent sadness, sometimes irritability, and can be costly and debilitating due to its pervasive impact on the mind, emotions, behaviors, and physical health of those who suffer from it (WHO, 2009; American Psychological Association, APA, 2009). In the U.S. nearly 9% of men report some level of depression (Blumberg, Clarke, & Blackwell, 2016). However, almost 13% of Black men and women have received a diagnosis for depression.

Furthermore, there is minimal information and a lacking synthesis of research about the examination of possible risk factors in childhood associated with the prevalence of depression, physical health outcomes, and health risk behaviors among Black men (Holden, McGregor, Blanks, & Mahaffey, 2012; Remigio-Baker, Hayes, & Reyes-Salvail, 2014; Ward, & Mengesha, 2013). Researchers suggest that Adverse Childhood Experiences (ACEs) are prevalent among Black men (Metzler et al., 2017; Williams 2003; Watkins 2012; Watkins, Walker, & Griffith, 2010) and are associated with poor adult physical and mental health outcomes, and health risk behaviors (De, Demyttenaere, & Bruffaerts, 2013; Felitti et al., 1998; Finkelhor, Shattuck, Turner, & Hamby, 2013). ACEs include traumatic experiences of physical, verbal, or sexual abuse, physical and emotional neglect, as well as negative early experiences of domestic dysfunction in the household environment (e.g., domestic violence; parent absence due to separation or divorce; parent or household member living with a mental illness; parent or household member living with a substance use disorder; household member incarceration) (Felitti et al., 1998).

ACEs can be characterized as *direct* or *environmental*, which can offer a more streamlined view in analysis to determine the possible impact on an individual's physical and mental health (Utah Department of Health, 2015). By categorizing ACEs by type, unique pathways can be explored to better understand how early adversity may increase the likelihood of future negative health consequences and impact health risk behaviors among Black men. For this study, (1) direct ACEs are defined as childhood exposure to physical, sexual, or verbal abuse (Felitti et al., 1998, Utah Department of Health, 2015); and (2) environmental ACEs are defined as childhood exposure to household adults living with a mental illness, living with a substance use disorder, experiencing an alcohol problem or living with an alcohol addiction, experiencing

divorce, engaging in domestic violence and undergoing the experience of household member incarceration (Felitti, 1998, Utah Department of Health, 2015).

The impact of ACEs on physical health was not explored until 1995 (Finkelhor et al., 2013) when the CDC launched the most extensive investigation on various adult health outcomes and adverse childhood experiences, coined as The ACE Study (Felitti et al., 1998). The study observed the association between dysfunction within the household and childhood abuse to the leading causes of death among a sample of 9,508 adults (i.e., with a mean age of 56.1 years) at a large Health Management Organization (HMO) in San Diego (Felitti et al., 1998; Flaherty et al, 2006; Flaherty et al., 2013; Ippen et al., 2011).

Researchers discovered a strong relationship between the *number* of ACEs and a higher risk of adverse health-related outcomes in adulthood (Felitti et al., 1998). The ACE study demonstrated how respondents with four or more ACEs had a substantially higher risk for several chronic diseases, injury, and health risk behaviors (Chapman et al., 2004; Felitti et al., 1998) revealing an adjusted odds ratio for stroke 2.4 (CI 1.3-45), heart disease 2.2 (CI 1.3-3.7), and diabetes 1.6 (CI 1.0-2.5) compared to those who reported no ACEs (Felitti et al., 1998). This study and subsequent studies also demonstrated evidence that *direct or environmental* ACEs rarely occur in isolation and are more commonly comorbid (Felitti, et al., 1998; Finkelhor et al., 2013; Ramstad et al., 2004; Van der Kolk et al., 2005).

A number of studies have also revealed associations between combined and individual early adversity to health risk behaviors such as heavy drinking (Dube, Felitti, Dong, Giles, & Anda, 2003; Rothman et al., 2008; Shin, Edwards, & Heeren, 2009), smoking (Annerbäck, Sahlqvist, Svedin, Wingren, Gustafsson, 2012; Edwards, Anda, Gu, Dube, & Felitti, 2007; Ford et al., 2011; Moran, Vuchinich, & Hall, 2004), and sexual risk behaviors (Bensley, Van Eenwyk,

& Simmons, 2000; Dube et al., 2003; Felitti et al., 1998) all practices that can impact mental health negatively. Despite this evidence, research investigating the impact of *direct* and *environmental* ACEs on depression with attention to possible mediating health risk behaviors (i.e., smoking, binge drinking, sexual risk behaviors) is limited among Black males (Gilbert et al, 2015; Roxburgh & MacArthur, 2014; Ward, & Mengesha, 2013).

Therefore, using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data, this study examined the relationship between differential (direct and environmental) exposure to ACE's and (current and lifetime diagnosis of) depression in Black men, and effects of social demographic factors (e.g., age, marital status, educational attainment, employment status, health insurance coverage, household income), presence of chronic medical conditions (e.g., stroke, diabetes, heart disease) and health behavioral risks (e.g., smoking, binge drinking, sexual risk behaviors).

Statement of the Problem

While all individuals may be at risk of experiencing early adversity in their lifetimes, some groups may be at higher risk (Ports et al., 2017). More specifically, minority group membership is often associated with increased physical health challenges and more significant mental health risks (Ports et al., 2017). Adverse childhood experiences (ACEs) have historically been associated with mental health challenges or depression, in adulthood with individuals being more likely to suffer from depression than a person who has no *number* of ACEs (CDC, 2013c; Chapman et al., 2004; De et al., 2013; Finkelhor et al., 2013; Metzler et al., 2017; Remigio-Baker et al., 2014).

In the U.S. Black men face a disproportionate burden of preventable mortality (Brown et al., 2009; Kelly-Irving et al., 2013) and morbidity rates when compared to other racial/ethnic

groups (CDC, 2010a). Given all the health concerns Black men face, depression may be among the most stigmatized and least addressed (Holden et al. 2012; Watkins 2012; Watkins & Jefferson 2013). Studies suggest that Black men have more adverse life experiences than men of other racial/ethnic groups, and thus, experience poorer mental health (Metzler et al., 2017; Williams 2003; Watkins 2012; Watkins, Walker, & Griffith, 2010). Given these adverse social and health outcomes, Black men's mental health should be an essential priority for health promotion. Unfortunately, culturally appropriate interventions that address Black men's mental health are often missing from national and state agendas designed to enact changes to healthcare and health promotion practices that could directly influence Black men and their families (Watkins et al., 2010). Several studies have also revealed associations between combined and individual early adversity to health risk behaviors such as heavy drinking, smoking and sexual risk behaviors (Dube et al., 2003; Felitti et al., 1998) which are practices that can negatively impact mental health.

Researchers also discovered a strong relationship between the *number* of ACEs and a higher risk of adverse health-related outcomes in adulthood (Felitti et al., 1998). The ACE study demonstrated how respondents with four or more ACEs had a substantially higher risk for several chronic diseases, injury, and health risk behaviors (Chapman et al., 2004; Felitti et al., 1998) revealing an adjusted odds ratio for stroke 2.4 (CI 1.3-45), heart disease 2.2 (CI 1.3-3.7), and diabetes 1.6 (CI 1.0-2.5) compared to those who reported no ACEs (Felitti et al., 1998). This study and subsequent studies also demonstrated clear evidence that *direct or environmental* ACEs rarely occur in isolation and are more commonly comorbid (Felitti, et al., 1998; Finkelhor et al., 2013; Ramstad et al., 2004; Van der Kolk et al., 2005).

However, few empirically studied research inquiries examine the impact of certain *types* of ACEs, direct and environmental, on the mental well-being of Black males along with the notion that these types of ACEs may also be mediated by health risk behaviors (Gilbert et al., 2015; Roxburgh & MacArthur, 2014; Ward, & Mengesha, 2013). ACEs frequently co-occur and no unique synthesis of findings from studies examining differential exposure to ACEs has been done, with respect to health risk behaviors as possible mediators on depression in Black men (CDC, 2013c).

Research would benefit by examining ACEs as distinct types because it would help establish whether any or specific types of childhood experiences are mediated by health risk behaviors, which can inform health promotion intervention efforts (Ward, & Brown, 2015). Research shows that primary care physicians are less likely to diagnose depression in Black individuals in comparison to their White counterparts (Nicolaidis et al., 2010). As a result, many Black individuals that live with a mental illness, without accounting for the possible influences of ACEs, tend to go undiagnosed (Kessler et al., 2010; Wang et al., 2005). Furthermore, national studies have found that depression, a specific type of mental health challenge, is more persistent, severe, disabling, and untreated among Black men (Holden et al., 2012; Williams et al., 2007)—which impact their overall health and well-being. Undiagnosed depression is depressive symptoms or psychological distress (CDC, 2010a). To adequately explore depression, un- or diagnosed in Black men and understand implications surrounding early adversity, the relationship between differential exposure to ACE's and depression of Black men will be examined.

Purpose of the Study

The purpose of this study and research inquiry is to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

Theoretical Framework

This study builds upon the works of Kerr & Bowen (1988) conceptual model of multi-generational processes. The framework highlights emotional determinants of health-related influences as it accounts for multiple dimensions of contextual familial, influential relationships and their impact and influences on children's early experiences. The theoretical underpinnings of the Bowen Family Theory outline interlocking concepts of familial system interaction that highlight the family structure and help explain the generational transmission of emotional experiences, behaviors, and mental health strain concerning family and quality of life (MacKay, 2012; Nichols et al., 2004). The Bowen Family Systems (BFS) theory will serve as the theoretical framework for examining differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions, and health behavioral risks (Kerr & Bowen, 1988).

Generally, family systems theories (Bavelas & Segal, 1982; Broderick, 1993; Kerr & Bowen, 1988) underscore how families interact with each other and with the broader environment to influence individual and family well-being. The BFS theory views interactions within the family as environmental influences contributing to each family member's individual development, as well as to the functioning of the family overall (Kerr & Bowen, 1988; Nichols et

al., 2004). Further, from this perspective, physical, emotional and attachment processes can be transmitted through generations (Kerr & Bowen, 1988; MacKay, 2012; Nichols et al., 2004).

Through this lens, it is plausible to explore the nascent concept of emotional determinant of health familial levels of influence to offer an organizing structure for how an adult, family friend, relative, other caregivers' childhood exposure to early adversity may impact the home environment and the future mental health of the child in the home (MacKay, 2012; Nichols et al., 2004). Furthermore, Black families and children, often face disproportionately high levels of life stress due to structural barriers related to racism and discrimination (Cauce, Cruz, Corona, & Conger, 2011; Hodgkinson, Godoy, Beers, & Lewin, 2017; MacKay, 2012; Nichols et al., 2004), which from a family systems approach, may negatively impact future individual and family functioning and physical and mental health status (Cowan, Cowan, & Schulz, 1996; MacKay, 2012; Nichols et al., 2004).

Furthermore, family systems theories (Bavelas & Segal, 1993; Broderick, 1993; Kerr & Bowen, 1988) highlight the importance of within-family interactions to individual and family functioning, well-being, and the influence of trauma (MacKay, 2012; Nichols et al., 2004), which will underscore the present research inquiry surrounding ACEs and Black men. Therefore, given the unmet need to address depression contextually within the Black male population the BFS theory will be utilized to help frame the examination of early adverse experiences within the context of the family system, mediating health risk behaviors, and their associations with the presence of chronic medical conditions and depression in Black men (Broderick, 1993).

Independent Variables

Direct ACEs items. A direct ACE refers to early exposure, before age 18, of physical, verbal, and sexual abuse. Direct exposure was defined as a "yes" or "no" response

for each of the following types. Physical abuse was operationalized as "Were you ever personally hit, beat, kicked or physically hurt by parent or another adult, not including spanking?" Verbal abuse was operationalized as "Did a parent or adult in your home ever swear at you, insult you, or put you down?" Sexual abuse was collapsed into one variable and operationalized as "Has anyone at least 5 years older or an adult, ever try to touch you sexually, make you touch them sexually, or force you to have sex?"

Environmental ACEs items. An environmental ACE refers to exposure, before age 18, to household adults living with a mental illness, living with a substance use disorder, living with an alcohol addiction, experiencing divorce, engaging in domestic violence, and undergoing the experience of household member incarceration. Environmental exposure was defined as a "yes" or "no" response for each of the following types. Household member living with a mental illness was operationalized as "Did you live with anyone who was depressed, mentally ill, or suicidal?" Household member experiencing an alcohol problem or living with an alcohol addiction was operationalized as "Did you live with anyone who was a problem drinker or alcoholic?" Household member living with a substance use disorder was operationalized as "Did you live with anyone who used illegal street drugs or who abused prescription medications?" Household member incarceration was operationalized as "Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?" Divorce was operationalized as "Were your parents separated or divorced?" Domestic violence was operationalized as "Did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?"

Covariates. The covariates selected for this study included the following variable types: (1) Age group (18-24, 25-34, 35-44, 45-54, 55-64, 65 or older); (2) self-reported race (Black);

(3) marital status (married, divorced, separated, widowed, or never married); (4) educational attainment (less than high school, high school or GED, some college or technical school, college graduate); (5) employment status (employed, unemployed, retired, unable to work); (6) health insurance coverage (yes or no); (7) annual income (≤ $15,000, $15,000-$24,999, $25,000-$34,999, $35,000-$49,999, ≥ $50,000); and (8) presence of chronic medical condition (stroke, diabetes, heart disease).

Mediating Variables. The mediating variables for this study included the following types. Smoking was operationalized as "Do you now smoke cigarettes every day, some days, or not at all?" Response options included not at all which was recoded as no cigarette use. Responses of cigarette use for every day or some days were recoded as yes for cigarette use. Binge drinking was operationalized as "One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?" Response options include 1-3 drinks, 4-10 drinks, 11-15 drinks, and 16 or more. Sexual risk behavior was operationalized as a response of "yes" or "no" to the following question, "In the past year, have you used intravenous drugs, been treated for a sexually transmitted or venereal disease, given or received money or drugs in exchange for sex, or had anal sex without a condom?"

Dependent variable

Depression items. Current depression in this study was measured based on self-report manifestations of depressive symptoms where a response of "no" to the question **"**Now thinking about your mental health, which includes stress, depression, and problems with emotions, during the past 30 days was your mental health not good?" represents no significant depressive

symptoms and response of "yes" represents a range of possible manifestations of depressive symptoms from mild, to moderate, moderately severe and severe (Kroenke et al., 2009).

Lifetime diagnosis of depression was also defined as a response of "yes" or "no" to the question **"**Has a doctor, nurse, or other health professional ever told you that you have a depressive disorder, including depression, major depression, dysthymia, or minor depression?" A lifetime diagnosis of depression is a major cause of mortality and morbidity in the U.S. and is associated with decreased social functioning and health-related quality of life (Creed et al., 2002; Gaynes, Burns, Tweed, & Erickson, 2002; Hu, 2007; Saarni, 2007; Sobocki et al., 2007), as well as with increased disability (Dunlop, Manheim, Song, Lyons, & Chang, 2005; Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007; Lenze et al., 2001). In addition, depressive symptoms, are associated with increased prevalence of chronic medical conditions and often exacerbate or precipitate these ailments (Chapman, Perry, & Strine, 2005). Fortunately, depression can often be effectively treated with psychotherapies and medication (Young, Klap, Sherbourne, & Wells, 2001). However, Black men are often less likely to seek care, and those who do often do not receive suitable care (Addis, 2008; Holden et al., 2012; Mahalik, Good, & Englar-Carlson, 2003; Plowden, Adams, & Wiley, 2016; Watkins et al., 2017; Williams et al., 2007).

Research Questions

1. What is the prevalence of ACEs (e.g., direct and environmental) among Black men?
2. What is the relationship/association between ACEs (e.g., direct and environmental) and (e.g., current and lifetime diagnosis) of depression among Black Men?
3. What is the relationship/association between presence of chronic medical condition (e.g., stroke, heart disease, and diabetes) and ACEs (e.g., direct and environmental) among Black Men?

4. What sociodemographic factors (age, marital status, educational attainment, employment status, health insurance coverage, household income) are associated with ACEs (e.g., direct and environmental) among Black Men?
5. Do health risk behaviors (e.g., smoking, binge drinking, sexual risk behaviors) mediate the impact of ACEs (e.g., no ACE exposure to more than 5 ACEs) on (e.g., current and lifetime diagnosis) of depression among Black Men?

Significance of the Study

The purpose of this study and research inquiry was to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

This study aims to contribute to the growing body of knowledge surrounding the impact that ACEs may have on the long term physical and mental health outcomes of Black men. Physical health and mental health are inextricably linked. Moreover, this research seeks to provide a unique contribution surrounding the impact of ACEs on the lives of Black men by attempting to provide insight into the possible origin of mental health challenges and mediating health risk behaviors. This study, to my knowledge, is the first of its kind to seek to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions, and health behavioral risks.

In addition, this study would help address the Healthy People 2020 objectives of improving mental health through prevention among adults in the United States (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [HHS

ODPHP], 2017). This study may help not only the individuals who have been physical, verbally, or sexually abused but also with understanding the implications of varying forms of abuse and the impact familial influence has on Black adult men. The study finds its relevance to health education and health promotion as it can inform the development of future culturally appropriate mental health promotion programs. In addition, for public health practice, the study findings can help in adequately assessing opportunities for behavioral health interventions for children exposed to direct and environmental ACEs, assist in the development of a community health framework, or aid in the development of a health education curriculum. With insights uncovered by the study, health education and promotion professionals and practitioners may be able to develop more effective preventive-focused mental health interventions. Thus, information can be used in health education classes, health promotion programs, and workshops, among those committed to promoting the optimal health of young Black male children, adults, and their families.

Scope of the Study

This study utilized a cross-sectional survey design using secondary data analysis. Data collected include persons aged 18 years and older, who live in households, whereby interviewees participated monthly by landline or cell phone. The BRFSS, generally, collects data on behaviors of significant health risk, preventive health practice approaches, and health care access primarily related to chronic disease and injury. There are more than 50 states, along with Puerto Rico, the U.S Virgin Islands, the District of Columbia, and Guam, that participate in the BRFSS survey. In addition to a specific set of questions answered by each state or territory, there are additional, optional modules that cover other health-related topics or ask more in-depth questions. The 2012 survey included an optional ACEs module consisting of 11 questions, which asked survey

participants about events that happened before they were 18 years old. Further, the optional ACE module included queries about adverse, stressful and traumatic events experienced as a child (CDC & BRFSS, 2013a).

Delimitations

1. Results are only specific to the time frame of 2012 and may not accurately represent perceptions outside the specified date range.
2. Results are only specific to the chosen data set which was based on the current availability of a sufficient sample size of Black men evidenced within the 2012-time frame.
3. Results will only be analyzed for adult men ages 18 and older and thus excluding men ages 15-17.
4. Participants who refused to participate were excluded from this study.

Assumptions

1. It is assumed that participants provided accurate and honest responses.
2. It is assumed that the study will represent a representative sample of Black men based on the BRFSS data collection methods.
3. It is assumed that the participation of the Black men in the study was voluntary.
4. It is assumed that after explanation was provided to the participants, individuals in the survey understood the questions, procedures and the purpose.

Limitations

1. The BRFSS is a cross-sectional survey. Therefore, causal associations cannot be made.
2. The results are based on self-report and may be subjected to response bias

3. Recall bias may factor into results as some questions ask participants to reflect on past life events (before the age of 18).
4. Participants may seek to provide socially acceptable answers or report behaviors that reflect their interpretation or what they thought the researcher sought, which can create social desirability bias.
5. Participants involved may have misunderstood the terminology or phrase presented by the interviewee, which can cause question bias.

Definitions of Terms

Adverse Childhood Experiences. In the present study, *Adverse Childhood Experiences* refer to an early experience, before age 18, of physical, verbal or sexual abuse and exposure to household dysfunction (e.g., exposure to household adults living with a mental illness, living with a substance use disorder, experiencing divorce, engaging in domestic violence, experiencing an alcohol problem or living with an alcohol addiction and undergoing the experience of family member incarceration) (Felitti, 1998, Centers for Disease Control and Prevention, 2013).

Binge Drinking. For the purpose of this study, *binge drinking* refers to the consumption of 5 or more alcoholic drinks for males or 4 or more alcoholic drinks for females within the same occasion (e.g., within a couple of hours of each other or at the same time) or at least 1 day in the past month (CDC & BRFSS, 2013c).

Black. For the purpose of this study, *Black* is defined as a person with origins, in Africa, to any of the Black racial groups; Black, capitalized, applies to individuals of the African diaspora, not color as an adjective (Philogene, 1999). In this study, Black will refer to race, not ethnicity (United States Census Bureau, 2010).

Bowen Family Systems theory. The *Bowen Family Systems theory*, accounts for familial interactions and their impact and influences on children's early experiences and later adult health outcomes (Bavelas & Segal, 1982; Broderick, 1993; Kerr & Bowen, 1988). The family is on view as an emotional system that leads to growth and development and influences the overall conduct of its members (Bavelas & Segal, 1982; Broderick, 1993; Kerr & Bowen, 1988).

Depression. For this study, *depression* refers to pervasive problems with emotions and depressive symptoms characterized by persistent sadness and sometimes irritability causing deleterious effects on the mind, emotions, behaviors, and physical health of those who suffer from it (World Health Organization, WHO, 2009; American Psychological Association, 2009).

Thus, *current depression*, in this study, was operationalized as self-report manifestations of depressive symptoms and pervasive problems with emotions where a response of "no" to the question **"**Now thinking about your mental health, which includes stress, depression, and problems with emotions, during the past 30 days was your mental health not good?" represents no significant depressive symptoms and pervasive problems with emotions and response of "yes" represents a range of possible manifestations of depressive symptoms and pervasive problems with emotions from mild, to moderate, moderately severe and severe (Kroenke et al., 2009).

Lifetime diagnosis of depression was operationalized as a response of "yes" or "no" to the question **"**Has a doctor, nurse, or other health professional ever told you (diagnosis) that you have a depressive disorder, including depression, major depression, dysthymia, or minor depression?"

Direct Adverse Childhood Experiences (ACEs). For this study, *direct ACEs* are defined as exposure, before age 18, to physical, sexual, or verbal abuse (Felitti, 1998, Utah Department of Health, 2015).

Divorce. For this study, *divorce* is an early experience, before age 18, where the individual reported living with parents who underwent separation or divorced (Felitti, 1998).

Emotional Determinants of Health. For this study, *emotional determinants of health* are impacted chiefly by political determinants of health or the wider set of forces and systems or structural processes shaping the conditions of daily life (Dawes, 2020) and are inextricably linked to social determinants of health (e.g., conditions in which people are born, grow, work, live, and age) (HHS ODPHP, 2011) existing as mutually emotional health reinforcing or influencing, interrelated, non-familial or familial relationships across varying multi-dimensional levels of influence that may affect emotional health (Plough, 2017). The EDOH organizing structure, for this study, is viewable in conjunction with the familial lens of the Bowen Family Systems Theory, consisting of five key areas or multi-dimensional levels of influence that can positively or negatively impact emotional health: (1) intrapersonal relationships, (2) interpersonal relationships, (3) contextual relationships, (4) multi-generational relationships, (5) societal relationships. EDOH help frame how essential family functions, such as nurturance, protection, stability, and cohesion can look differently among families, impacted by systemic factors, and the subsequent impacts on mental health.

Emotional Health. For this study, *emotional health* refers to a state of positive emotional, psychological function (Centers for Disease Control and Prevention, CDC, 2013a).

Environmental Adverse Childhood Experiences (ACEs). For this study, *environmental ACEs* is defined as early exposure, before age 18, to household adults living with

a mental illness, living with a substance use disorder, experiencing an alcohol problem or living with an alcohol addiction, experiencing divorce, engaging in domestic violence and undergoing the experience of household member incarceration (Felitti, 1998, Utah Department of Health, 2015).

Equity. For this study, *equity* is the guarantee of fair treatment, access, opportunity, and advancement while concurrently striving to identify and eliminate barriers that prevent and have prevented the full participation of some groups (Center for Assessment and Policy Development, CAPD, 2019).

Domestic Violence. For this study, *domestic violence* is early exposure, before age 18, where the individual reported living with a parent, caregiver, other family member or adult in the home who slapped, hit, kicked, punched, or beat each other up (Felitti, 1998).

Household Member Incarceration. For this study, *household member incarceration* is an early exposure, before age 18, where the individual reported living with a parent, caregiver, other family member or adult in the home who served time or was sentenced to serve time in a prison, jail, or other correctional facility (Felitti, 1998).

Health Risk Behavior. For this study, *health risk behavior* is used to describe actions with potentially harmful effects on health, specifically smoking, binge drinking, and risky sexual activity or unsafe sexual practices (Asarnow, 2014; Eaton, 2010; Eaton, 2012).

Mental Health. *Mental health* is a state of well-being in which individuals realize their abilities, work productively, cope with normal stressors, and make contributions to their community (Centers for Disease Control and Prevention, CDC, 2013a).

Mental Illness. *Mental illness* is alterations in thinking, mood, and or behavior and is defined collectively as diagnosable mental disorders associated with distress and or impaired functioning (CDC, 2013a).

Household Member Mental Illness. For this study, *household member mental illness* is early exposure, before age of 18, where the individual reported living with parent, caregiver, other family member or adult in the home who was depressed, mentally ill, or suicidal (Felitti, 1998).

Household Member Alcohol Misuse. For this study, *household member alcohol misuse* is early exposure, before the age 18, where the individual reported living with a parent, caregiver, other family member or adult in the home who was a problem drinker or alcoholic (Felitti, 1998).

Household Member Substance Misuse. For this study, *household member substance misuse* is early exposure, before the age 18, where the individual reported living with a parent, caregiver, other family member or adult in the home who used illegal street drugs or who abused prescription medications (Felitti, 1998).

Physical Abuse. For this study, *physical abuse* is early exposure, before age 18, where the individual reported being hit, beat, kicked, or physically hurt, not including spanking, by their parents or an adult (Centers for Disease Control and Prevention, 2013; Felitti, 1998).

Political Determinants of Health. For this study, *political determinants of health*, involve the structural organizing of relationships, the distribution of resources, and administration of power, operating concurrently in ways that mutually influence or reinforce one another to structure opportunities that either advance health equity or intensify health inequities (Dawes, 2020). The PDOH model emphasizes three significant aspects of political determinants,

which include government, voting, and policy (Dawes, 2020). The PDOH lens assists in the examination of processes, structures and outputs that permit inequities to structurally flourish or develop (Dawes, 2020). Thus, the PDOH provide a multidisciplinary basis to address a multitude of multifaceted factors influencing and affecting the overall quality of life continuum and frame understandings around premature death for some and the extension of life for others (Dawes, 2020).

Racial equity/race equity. For this study, *racial equity, or race equity,* is the elimination of policies, practices, attitudes, and cultural messages that reinforce differential outcomes by race. Race equity is one part of race justice and must be addressed at the root causes of inequity and not just the manifestations (CAPD, 2019).

Sexual Abuse. For this study, *sexual abuse* is early exposure, before age 18, where the individual reported being touched sexually, made to touch sexually, or forced to have sex by anyone 5 years older or a parent, caregiver, other family member or adult in the home (Centers for Disease Control and Prevention, 2013; Felitti, 1998).

Sexual Risk Behavior. For this study, *sexual risk behavior* refers to a "yes" or "no" response to the following questions: (1) Have you used intravenous drugs in the past year?"; (2) "Have you been treated for a sexually transmitted or venereal disease in the past year?"; (3) Have you given or received money or drugs in exchange for sex in the past year?"; (4) Have you had anal sex without a condom in the past year?" (BRFSS & CDC, 2013).

Social Determinants of Health. For this study, *social determinants of health* refer to "economic and social conditions that individuals are born into, where they live, play, worship, work, and age that affect a wide range of health outcomes" (HHS ODPHP, 2011).

Verbal Abuse. For this study, *verbal abuse* is early exposure, before age 18, where the individual reported being sworn at, insulted, or put down by a household member (Centers for Disease Control and Prevention, 2013; Felitti, 1998).

CHAPTER 2

LITERATURE REVIEW

This chapter serves as an expanded literature review on mental health regarding Black men, adverse childhood experiences, chronic health conditions and health risk behaviors. The purpose of this study and research inquiry was to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

In this chapter, readers will get an in-depth look at how adverse childhood experiences and mental health is understood along with an examination of theoretical underpinnings. The varying determinants that may impinge on mental health specific to Black men is presented.

Defining Mental Health

Mental health takes shape in utero, long before children crawl, walk, run, or grow towards adulthood (Kinsella, & Monk, 2009). Research efforts to bring awareness to protecting the mental health of children has evolved over decades with influences from family and the greater society acting as significant factors for positively or negatively affecting quality of life (Breslau et al., 2005; Talge, Neal, Glover, & Early Stress, Translational Research and Prevention Science Network, 2007). Mental health can serve as an indicator of overall child health and adult well-being. Indeed, addressing mental health concerns, when needed, are often contingent upon varying factors related to economic and educational advantages or resources, home environment,

health care access, neighborhood safety, and behavioral outcomes (Dallas, & Burton, 2004; Miller & Bennett, 2011; Mitchell et al., 2014; Watkins, & Griffith, 2013).

Mental health, is recognized as an essential component to overall health and is defined as a state of well-being in which individuals realize their abilities, work productively, cope with normal stressors, and make contributions to their community (CDC, 2013a). Mental illness is alterations in thinking, mood, and or behavior and is defined collectively as diagnosable mental disorders associated with distress and or impaired functioning (CDC, 2013a). According to Healthy People 2020, mental disorders are the leading cause of disability, accounting for nearly 19% of all years of life lost to disability and premature mortality (US Burden of Disease, 2013).

Research efforts to bring awareness to protecting the mental health of children and families have evolved in recent decades (Moore & Holaday, 2016). Early adversity, family and societal influences are all factors that can impact the quality of life for children well into adulthood. Therefore, it is important to consider along with these influences how mental health can shape overall child health and adult health outcomes (Moore & Holaday, 2016; The Annie E. Casey Foundation, 2017).

Overview of Mental Health and Black Men

The inconsistencies in reporting on the mental health of Black men have long been a complicated issue due to under-diagnosis, misdiagnosis and lack of treatment within mental health investigations (Holden et al., 2012; Remigio-Baker et al., 2014; Ward, & Mengesha, 2013). According to the U.S. Department of Health and Human Services, Black adults were less likely to suffer from major depression (DHHS, 2002). Studies, specifically community-based, report no racial differences in mental disorders (Watson & Hunter, 2015) nor reveal greater prevalence rates among Blacks than Whites (Neighbors et al., 2007). Still, among those with

diagnosable mental disorders, Black adults are more likely than White adults to experience lengthy disorder trajectories along with severe symptoms with roughly 7 percent of Black men meeting clinical depression criteria within a year timeframe (Watkins, Mitchell, Mouzon, Hawkins, 2017). By applying that figure to the current national population estimates, 1.4 million Black men are currently suffering from major depression (Watkins et al., 2017). Furthermore, given high rates of unmet need and the stigma associated with mental health in this population, it is likely that specific depression prevalence figures are significantly higher (Lincoln et al., 2011).

For example, in a national survey with a representative sample of Black men, Williams et al. (2007) examined the persistence, prevalence, disability, and treatment, associated with major depressive disorder (MDD) in Blacks, Caribbean Blacks, and non-Hispanic Whites. Data explored were drawn from the National Survey of American Life (NSAL): Coping with Stress in the 21st Century. The NSAL data analysis included a total sample for the study of 6,082 adults, where 1,271 were Black men. Results demonstrated that lifetime prevalence estimates of MDD were significantly higher for Whites (17.9%), trailed by Caribbean Blacks (12.9%), Blacks or African Americans (10.4%).

Despite the lifetime prevalence of MDD being lowest for Blacks, there exist a higher disability and chronicity, for Blacks (56.5%) along with Caribbean Blacks (56.0%), compared to Whites (38.6%). Further investigation of the NSAL data revealed the disability and chronicity associated with MDD demonstrated severe impairment within varying roles among areas of relationships (Blacks 43.2%, Whites 30.9%), socialization (Blacks 55.4%, Whites 34.2%), and work (Blacks 37.2%, Whites 28.9%) (Williams et al., 2007). In a similar study that included the use of the NSAL data set, Lincoln et al. (2011) investigated both the 12-month and lifetime prevalence of MDD among Black men. Results demonstrated a 12-month MDD prevalence of

5.02% and lifetime prevalence of 9.98% for Blacks, indicating a slightly higher than the lifetime prevalence in the Williams et al. (2007) research study. The Lincoln et al. (2011) study excluded examining disability and chronicity patterns of depression between participants. This exclusion reinforces the importance of reviewing profiles and strength of associations to aid in the estimation and reduction of the prevalence of depression, improvement in treatment, and reduction in health disparities among Black men.

Black men still experience high rates of underemployment, unemployment, and poverty and are imprisoned at significantly higher rates than men of other racial/ethnic groups, due to structural racism (Jäggi et al. 2016). They are also more likely, as one of the most common subpopulations in the United States, to experience violence in the community, either indirectly or directly. Studies suggest that Black men have *more* adverse life experiences than men of other racial/ethnic groups, and thus, experience poorer mental health (Metzler et al., 2017; Williams 2003; Watkins 2012; Watkins, Walker, & Griffith, 2010). Given all the health concerns Black men face, depression may be among the most stigmatized and least addressed within the mental health system (Holden et al. 2012; Watkins 2012; Watkins & Jefferson 2013).

While an analysis of the mental health system seems warranted, the exploration of the impact of early adversity on self-reported mental health status, presence of chronic medical conditions, and mediating health risk behaviors among Black men is the foci of this study. Furthermore, the Strong Black Man (SBM) ideology presents one phrase to show the fixed and coalesced nature of strength, often invoked to bury the presence of mental health strain, when one speaks of Black men. The SBM ideology permeates every aspect of Black manhood (Neal, 2005). To fully understand this concept, an exploration into its historical context is needed.

Historical and Social Context of the Strong Black Man (SBM)

The creation of the Strong Black Man (SBM) ideology is the product of nearly 400 years of lived experiences by Black men in North America (Neal, 2005). The concept underscores the intersections of oppressions between racism, economic exploitation, and random and calculated violence rooted throughout the time of African enslavement (Neal, 2005). It is during this time of enslavement when African people endured subjugation in the robbing of their identity. The enslavement of Africans, at the time, was justified due to the perception of Africans as a lesser uncivilized racial group in need of restraint (Alexander, 2012).

During slavery, Black men's bodies were deemed property, thus normalizing the experience of abject violence with no regard to their humanity or well-being (Neal, 2005; Spillers, 1987). Furthermore, the nation's constitution declared, for congressional representation, that Black individuals within states be counted as 3/5 of the number of white residents of that state, fortifying the creation and maintenance of a racial caste system. (Simba, 2014; U.S. Const. art. I, § 2). The existence of this legislation reemphasized how devalued Black men were in comparison to their White counterparts (Alexander, 2012).

The prevailing notion of Black men as inherently dangerous, coupled with the sheer disregard for their humanity and identity, reinforced slavery and led to decades of perceived Black inferiority among Whites and legal segregation within America (Alexander, 2012). Post-slavery life, for Black men, consisted of pervasive stereotypes depicting them as aggressive and savage predators who were prone to attack white men and rape white women (Alexander, 2012; Blackmon, 2008). Thus, the creation of black codes sought to enforce control and the governance of newly freed Black Americans (Alexander, 2012; Blackmon, 2008).

The creation of vagrancy laws also made it illegal to be unemployed, directly targeting newly freed Black individuals (Alexander, 2012; Blackmon, 2008). The implementation of vagrancy laws required all free Black individuals, over the age of eighteen, to possess written proof of employment at the start of each year (Alexander, 2012; Blackmon, 2008). Individuals without appropriate documentation were regarded as vagrants and incarcerated (Alexander, 2012; Blackmon, 2008). The primarily southern-state operated racial caste system, Jim Crow, which existed between 1877 and the mid-1960s, would sustain America's continual subjugation of Black individuals (Alexander, 2012).

Jim Crow laws, comprising of a legal system full of a series of rigid anti-Black legislation and mandatory segregation, emerged from white supremacist rhetoric following reconstruction (Alexander, 2012; Constitutional Rights Foundation, 2016; Inwood, 2011). Due, in part, to a variety of numerous marches, resistant activists, lunch counter sit-ins, and Freedom Rides, just the residual effects of Jim Crow remain (Alexander, 2012; Inwood, 2011). Thus, physical signs of adhering to segregation, are no longer mandated to follow as it pertains to legal ramifications (Alexander, 2012; Inwood, 2011).

Yet, segregation, through the cooperation of major societal institutions, is one primary mode racial inequities persist in the U.S (Alexander, 2012). The history of slavery, Jim Crow, and legal segregation is associated with disparities in health and has shaped the conditions that have impacted the mental health of Black men in the United States (Williams & Collins, 2004). Indeed, these conditions contribute to how society views Black men as well as how these men would view themselves and adapt for the sake of livelihood (Williams & Collins, 2004).

Thus, the origination of the SBM ideology was solidified in American history culminating in the forced suffering of institutionalized violence as Black men often lived through

it in silence (Neal, 2005). The inherent strength understood in Black men was born out of the denial towards their physical, emotional, and material needs to attend to the safety and security of their families or the needs of others (Neal, 2005). In the eighteenth and nineteenth centuries the SBM ideology also lent itself as a model of Black exceptionalism or viewing the terminology as synonymous with respectable Black men.

This take on the SBM ideology became situated as a visual model of Black masculine perfectibility, established by Major Martin Delaney because of his posed portrait upon return from the Civil War (Neal, 2015; Wallace, 2002). According to Wallace (2002), the Delaney portrait "came to portray not just an exceptional man but a typical one, general and reproducible by others." As a result, Black masculine ambition was joined into a single image shaping a specific form of Black male identity—emerging as a visual template of the SBM as later seen in the likes of historical figures, Booker T. Washington and W.E.B. Du Bois. These later iterations of the SBM consisting of seminal race men such as Fredrick Douglas, W.E.B. Du Bois, and Marcus Garvey spoke truth to power about racism and Black disenfranchisement with the SBM ideology surviving into the twentieth century.

During the 1960s the SBM ideology was informed primarily by "Reactionary Black Nationalism" which advocated self-love, self-respect, self-acceptance, self-help, pride, and unity in a time of visible racial inequality (Neal, 2015; Wallace, 2002). However, this same notion promoted "bigotry, intolerance, hatred, sexism, and homophobia among other things" (Neal, 2015, Wallace, 2002). Despite the elements of the 60s-styled SBM ideology representing "black power fists, afros, and dashikis," it soon became the driving force behind the "plight of black men" narrative (Neal, 2015, Wallace, 2002). The narrative, perpetuated by Daniel Patrick Moynihan's study, "The Negro Family: The Case for National Action," was written while

Moynihan was the Assistant Secretary of Labor during President Lyndon Johnson's administration (Moynihan, 1967; Neal, 2015). Moynihan argued, after the passage of the Civil Rights Act of 1964, that "unless a special effort addresses the fundamental problem of the family structure—that removes the prevailing Black matriarchal structure and replaces it with a patriarchal one—Blacks cannot expect equal opportunities and equal results as a community" (Moynihan, 1967). Moynihan further argued that American society "presumes male leadership in private and public affairs and that Black acceptance into the mainstream of American life depended on the embrace of patriarchy" (Moynihan, 1967). This version of the SBM continued to inform contemporary thinking regarding Black men's plight, which at the expense of Black women, resulted in decades of damaging behavior and abuse towards them. Furthermore, the report's language suggests blaming Black women for leading Black families, gave rise to derogatory archetypes of Black womanhood, and resulted in these stereotypes impacting housing policy (Spillers, 1987).

Indeed, by the early twenty-first century, the SBM ideology reinforced a rigid model of Black masculinity that allowed for little, if any, flexibility. For example, perceived models of masculinity that went beyond the SBM ideology were not acceptable and viewed as "Not Black enough, not quite man enough, not quite Black man enough" (Neal, 2005). Black men's definition and view of masculinity would soon, within the context of norms, consist of a continual adaptation to social conditions while not compromising attempts to fulfill a traditional role. These norms also comprised of numerous dimensions such as toughness, aggression, restrictive emotionality, and self-reliance (Addis, 2008; Addis & Mahalik, 2003; Levant, 1996; Rochlen et al., 2010). Furthermore, these norms taught men to mask their pain and use coping strategies to tackle psychological distress, an approach that worsened depression since

they prevent men from seeking necessary mental health resources and expressing psychological distress (Addis, 2008; Mahalik, Good, & Englar-Carlson, 2003).

Toxic Masculinity and Mental Health

Men, particularly Black men, are less likely to seek mental health services compared to their female counterparts (Addis, 2008; Mahalik, Good, & Englar-Carlson, 2003; Watkins et al., 2017). Yet, according to a systematic review on Black males, trauma, and mental health service use, 56-74% of Black males who have been exposed to traumatic events may have an unmet need for mental health services (Motley & Banks, 2018). One of the underlying factors that contribute to the underuse of pursuing professional mental health help is masculinity norms. It is typically observed as unacceptable for both boys and men to express or discuss their emotions. Due to more discussion and debate surrounding masculinity, in recent years, along with the release of the 2018 *American Psychological Association's guidelines for psychological practice with boys and men* the notion of masculinity has demanded a more critical examination.

The concept of masculinity is a set of prescriptive, descriptive, and proscriptive understandings regarding both boys and adult men (Levant & Richmond, 2007; Pleck, Sonenstein, & Ku, 1994). Though there exist differences in ideas about masculinity, there is a specific grouping of values that have held influence over large sections of the population, which include: achievement, anti-femininity, avoidance of the presence of weakness, and violence, risk, and adventure. These ideals have collectively aligned with traditional masculinity theory (Levant & Richmond, 2007). Also, given the social constructionist perspective and plurality of masculinity, the term masculinities are also being used with increased frequency (Wong & Wester, 2016). Though, it is critical to note, masculinity theories, seldom account for the economic, sociological, and cultural conditions and complexities of Black male life, often

overshadowing other expressions of masculinity values, positive or negative, shown by Black males through centuries (Curry, 2017).

There exist a variety of masculinity philosophies, but most individuals often will use both traditional and toxic masculinity synonymously, yet they are not the same. According to Silver, Levant, & Gonzalez (2018) there are four common areas of masculinity in American society: (1) men should strive for achievement and success; (2) men should take care of their problems independently and not show weakness; (3) men should be risk takers, seek adventure and utilize violence if necessary; (4) men should shun anything feminine or associated with females.

The traditional masculinity ideology reflects the dominant view of the male role before gender roles underwent feminist deconstruction. Toxic masculinity, however, or a manifestation of masculinities, is distinguished by the enforcement of constraints in behavior based on gender roles that work to expand present structures of power that seek to favor male dominance (Parent, Gobble, & Rochlen, 2018).

Toxic masculinity is a restrictive description of manhood, characterizing manhood as defined by sex, aggression, violence, and status. Toxic masculinity is a cultural ideal of manliness (Parent, Gobble, & Rochlen, 2018). Within this view, strength is the cornerstone while the display of emotions is a weakness, that if shown one's status as a “man” is in jeopardy of being taken away (Parent, Gobble, & Rochlen, 2018). Furthermore, the consistent displaying of traits associated with toxic masculinity can begin resulting in increased adverse physical and mental health challenges (Silver, Levant, & Gonzalez, 2018). As men continue to adhere to rigid masculinity norms additional problems can manifest such as (1) more significant depression and anxiety; (2) high blood pressure; (3) difficulty with interpersonal intimacy and dating; (4)

increased susceptibility to interpersonal violence; and (5) and more significant psychological distress (Silver, Levant, & Gonzalez, 2018).

Psychological Distress in Black Men

According to the transactional model of stress, where the conscious, purposive behaviors and perceptions related to stressors is at the center (Lazarus & Folkman, 1984), stress is characterized as subjectively perceived discrepancy between demands from the environment within a process of appraisal and an individual's resources (Lazarus & Folkman, 1984). Psychological distress occurs at the intersection of stress, stressors, and insufficient assets (Dohrenwend & Dohrenwend, 1974). Research suggests that for Black men, experiences with externalizing pressures stem from their history, traditional role experiences and position in society (Gaines, 2007; Lincoln et al., 2010; Lincoln et al., 2011; Neal, 2005; Wester, Vogel, Wei, & McLain, 2006) similar to depression (Ward & Mengesha, 2013). Psychological distress is an aversive state characterized by tension, weakness, worry, or headaches (Dohrenwend & Dohrenwend, 1974). Yet, exhibiting weakness is not allowed within the SBM ideology (Neal, 2005) regardless of the display of weakness, even if it is a result of significant challenges such as experiences with racism, familial, community, financial and employment-related issues—compounding psychological distress in Black men (Gaines, 2007; Lincoln et al., 2010; Lincoln et al., 2011; Neal, 2005; Wester et al., 2006).

A study of stress by Chung et al. (2014) examined perceived sources of stress in the lives of Black men in a major urban community. Though many of the responses named familial and economic problems shared among low-income men, discrimination and racism was named as explicit causes of stress associated with familial, community, employment-related and financial matters (Chung et al., 2014; Matthews, Hammond, Nuru-Jeter, Cole-Lewis, & Melvin, 2013).

For example, nearly all participants (93.2%) reported some level of stress in their lives and (95.2%) identified one or more current, and common, issue such as money and finances. Less common, yet still significant, areas of stress were locating, maintaining, and excelling within a job (28.4%); relationships with a significant other (21.9%); concerns about children (27.3%); and overall health and illness (15.1%). Two-fifths (43.2%) of the sample identified racially linked or mediated sources of stress, including explicitly identified experiences of racism directed against them as Black individuals. Experiences included denials of rights, the disrespect shown by the police or local government, lack of unity or strength in the Black community, the prevalence of violence and criminality—contributing to psychological distress. Furthermore, chi-square comparisons demonstrated that these significant sources of stress did not differ significantly by demographic characteristics, with low-income men, regardless of racial identity experiencing similar patterns of sources of stress.

This study provides empirical support for the need to develop and adapt existing evidence-based interventions to improve mental health outcomes for Black men. Also, the study offers recommendations for future research and program development that engage Black men, to account for both the causes of stress, psychological distress and adverse experiences to craft culturally appropriate sources of support for resiliency (Chung et al., 2014).

Depression and Black Men

One common mental health outcome of exposure to stress is depression (Chung et al., 2014). Though projections about depression published by the World Health Organization (WHO) have produced concern around depression on both national and international levels, resulting in increased epidemiological research on depression, a focus on depression among Black men is missing from the research literature (Ward & Mengesha, 2013). Watkins, Green, Rivers, and

Rowell (2006) conveyed this research gap by stating research in this area "are few and sporadic" (p. 232).

In an extensive literature review conducted by Ward & Mengesha (2013), only one article focused on depression among Black men. In this review article, Watkins et al. (2006) studied research investigating depression among Black men with the purpose of recognizing factors that are associated with depression in this racial group. Researchers discovered that factors such as discrimination and racism, economic status and income, and psychosocial coping are associated with depression and depressive symptoms among Black men (Matthews et al., 2013; Watkins et al., 2006). While the Watkins et al. (2006) review provides a valuable contribution and offers information about risk factors for Black men, it overlooked examining contextual information such as impacts from early adversity and considering emotional determinants of health that may positively inform treatment of depression among this minority group. For example, in Watkins et al. (2006), there does not exist information about prevalence of depression in this group, an account for an association between depression and early adverse experiences among Black males along with the notion that these types of early experiences could be mediated by health risk behaviors (Gilbert et al., 2015; Roxburgh & MacArthur, 2014; Ward, & Mengesha, 2013). Furthermore, no information regarding treatment-seeking or barriers to treatment seeking exists within this study (Watkins, 2006). Such information is needed to reduce depression prevalence, make improvements in treatment, strengthen efforts in health disparities reduction, and inform future research focusing on Black men (Watkins, 2006).

Mental Health and Un-diagnosis in Black Men

Black men have been historically underserved around mental healthcare when it comes to planning and implementing culturally-appropriate mental health promotion program efforts

within social agencies (Hergenrather, Geishecker, Clark, & Rhodes, 2013; Nicolaidis, et al., 2010; Ward, & Brown, 2015; Ward, & Mengesha, 2013; Watkins & Jefferson 2013). Healthy People 2020 acknowledge several social and cultural barriers and specifically health disparities that impact access to high-quality mental health services for Black men (ODPHP, 2017). According to a systematic review on Black males, trauma, and mental health services use, 56-74% of Black males who have been exposed to traumatic events may have an unmet need for mental health services (Motley & Banks, 2018). Yet, how Black men may view themselves, mainly through the SBM ideology, has implications for how others treat them. In general, Black men are less likely to receive guideline-appropriate depression care (Nicolaidis et al., 2010). Several studies have demonstrated how physicians in primary care are less likely to distinguish, treat, provide referrals for, or actively help manage depression in Black individuals compared to White individuals (Brooks, 1997; Nicolaidis et al., 2010; Snowden & Pingitore, 2001). Research also suggests that Black individuals are less likely than White individuals to pursue mental health specialty care, accept recommendations to utilize antidepressants, or consider counseling as a suitable option (Nicolaidis et al., 2010; Plowden et al., 2016).

Also, distrust exists among Black men surrounding the medical system. This inherent distrust was birthed out of violence, specifically institutionalized, and necessitates a thoughtful exploration of the historical conditions that helped to create it (Brandt, 1978; Nicolaidis et al., 2010). Thus, intergenerational transmissions of both trauma and subsequent messages to avoid the health care systems are still prevalent and have become the catalyst for many to create a preference for self-care (Brandt, 1978; Nicolaidis et al., 2010). While an analysis into the mental health system seems warranted, the exploration of self-reported mental health status, early adversity, presence of chronic medical conditions, and mediating health risk behaviors among

Black men are the considered foci of this study. Furthermore, these preferences, barriers, and considerations speak to the need for the cross-sectional exploratory nature and significance of this study.

Stress and Early Adversity

According to the Center for the Developing Child at Harvard University, prolonged exposure to early adversity in childhood has been shown to result in toxic stress (Felitti et al., 1998; Shonkoff, Boyce, & McEwen, 2009; Rogosch, Dackis, & Cicchetti, 2011; McEwen, 2012). It is critical to distinguish between three kinds of responses to stress as it relates to ACE exposure: positive, tolerable, and toxic. These three terms embody the stress response system's effect on the body, not to the stressful event or experience itself (Shonkoff et al., 2009; Rogosch et al., 2011; McEwen, 2012). Positive stress is brief increases in both hormone and heart rate levels. For example, this may include what a child undergoes when experiencing their first day of school or first piano recital, more specifically, if the stress motivates one to try harder or prepare more (Shonkoff et al., 2009; McEwen, 2012).

Tolerable stress takes place when the body's alert systems activate to a greater degree. A few examples may include when a child is admitted to the hospital or involved in a car accident. Fortunately, the activation of this level of stress is time-limited and buffered by relationships with adults who can help a child adapt. The care provided through meaningful connection can support the brain and reverse damaging effects to other organs, due to tolerable stress exposure (Shonkoff et al., 2009; McEwen, 2012).

Toxic stress response will occur when a child experiences frequent, intense, or prolonged adversity, resulting in changes to their baseline state. Examples may include verbal or physical abuse, exposure to violence, chronic neglect, caregiver living with a mental illness, family

economic hardship, and caregiver substance use (Dahlberg & Krug, 2002; Shonkoff et al., 2009; McEwen, 2012).

Major risk factors for toxic stress include extreme poverty, recurrent physical, verbal and sexual abuse, chronic neglect, severe maternal depression, parental substance misuse, and domestic violence placing significant adverse impacts on mental health well into adulthood (Dahlberg & Krug, 2002; Shonkoff, Garner, Committee on Psychosocial Aspects of Child and Family Health, & Committee on Early Childhood, Adoption, and Dependent Care, 2011; Rogosch et al., 2011; McEwen, 2012). Thus, information regarding exposure to trauma in early childhood, toxic stress, along with an examination of self-reported mental health of Black men is critically needed to estimate and reduce the prevalence of depression, improve treatment, reduce health disparities, and inform future research and mental health promotion interventions focusing on Black men.

Defining and Conceptualizing Trauma

Trauma and its psychological effect on an individual's overall health and well-being can vary in the way it manifests, and the way it is defined. The American Psychiatric Association (2013) characterizes trauma as experiencing the following: (1) the person witnesses or faces an event or series of events that include severe injury, the possibility of actual death, or the threat to the overall physical integrity of the individual or others. (2) the person's response includes extreme helplessness, terror, or fear. (American Psychiatric Association, 2013).

During the 1890s scholars like Sigmund Freud and Josef Breur questioned the etiology of trauma. The centrality of Freud’s work views trauma as being seen in relation to hysteria and in the integration process of trauma into memory (Breuer & Freud, 1893/1955). Breuer and Freud (1893/1955) understood symptoms of hysteria to be a result of memories of psychological

traumas. Indeed, they would describe that individuals being tormented by undesirable memories was intricately related to past psychological trauma. According to Breuer and Freud, due to the pain associated with trauma memories, individuals would use defense mechanisms, such as repression, to force these types of memories out of consciousness (Breuer & Freud, 1893/1955).

The concept of trauma has expanded in various fields over the past twenty years by many critical theorists (Burrows, 2004; Caruth, 2016; Di Prete, 2005; Dominick, 2001; Edkins, 2003; Felman & Laub, 1992; Schreiber, 2010) and others. In their works, they reflect on the traumatic experience expressed in various specific aspects, notably its relation to memory (Caruth, 2016; Felman & Laub, 1992). Contemporary trauma studies started with the still growing interest in the Holocaust, in which critics have focused on the impact of prolonged stress on the survivors of the concentration camps.

After World War II, especially after the Vietnam War, trauma theorists shifted attention to soldiers' Post-Traumatic Stress Disorder (PTSD) and the unbearable experiences that the survivors faced (Cahill & Foa, 2007; Van der Kolk et al., 2005). Critics also point out the importance of the memory of traumatic events to explain the deep psychological pain and distress of the individuals who experienced them (Van der Kolk et al., 2005).

Though these critics (Burrows, 2004; Caruth, 2016; Di Prete, 2005; Dominick, 2001; Edkins, 2003) explore many aspects of trauma, they mainly adopt the Freudian view as the basis of their critical and theoretical endeavors (Felman & Laub, 1992; Schreiber, 2010). In their work, however, trauma does not reflect repression. Instead, the focus is on the violent events overwhelming the victim and creating psychological distress and neurosis, events repeated in the forms of dissociative problems or personality disorders (Van der Kolk et al., 2005).

Contemporary views on trauma, as developed by pioneer critics such as Caruth (2006) and Felman & Laub (1992), relate the traumatic memory, experience, and the crisis it brings to conventional understandings of historical narrative, truth, and representation. Drawing from both the psychiatric notion of PTSD and Freudian psychoanalysis, conceptualizing trauma is an exploration of the way that an individual's witnessing or experiencing of a life threatening event is embodied in memories, fantasies, dreams, or flashbacks (Cahill & Foa, 2007; Van der Kolk et al., 2005). Also, contemporary views on trauma identify what cannot be fully remembered: the unspeakable traumatic events can be reflected only indirectly in terms accessible to textual analysis (Van der Kolk et al., 2005).

There are various ways of conceptualizing trauma, however; according to Caruth (2016), "trauma is described as a response to an unforeseen or terrifying violent event or events that are not fully understood as they occur but reappear later in repeated flashbacks, nightmares, and other repetitive phenomena" (p. 91). In Race, Trauma, and Home in the Novels of Toni Morrison, Schreiber suggests that "trauma, whether initiated by physical abuse, dehumanization, discrimination, exclusion, or abandonment, becomes embedded in both mental and bodily circuits" (Schreiber, 2010).

According to Horvitz (2000), Psychologist Elizabeth Waites defines trauma as "an injury to the mind or the body that demands structural repair" (p. 5). Horvitz (2000) also highlights Kali Tal's conceptualization of trauma as "a life-threatening event that removes preconceived notions about the world" (p. 5). Further, Horvitz (2000) "examines literary representations of trauma and its psychological impacts, provoked by sexual violence" (p. 1). Furthermore, researchers agree that trauma is the neurobiological and psychological consequence of overwhelming and

threatening life experiences (Bandura 1989; Cahill & Foa, 2007; Monson & Friedman, 2006; Pynoos, et al., 1999; Van der Kolk et al., 2005)

Undoubtedly, there exists a connection between these definitions of trauma and the concept of adverse childhood experiences (ACEs) (Felitti, 1998) mainly relating to an unforeseen emotional and violent experience or grouping of experiences rather than merely physical violence (Burrows, 2004; Caruth, 2016; Di Prete, 2005; Dominick, 2001; Edkins, 2003; Felman & Laub, 1992; Schreiber, 2010; Van der Kolk et al., 2005).

Adverse Childhood Experiences (ACEs)

In a revolutionary longitudinal study investigating risk factors in childhood associated with adult disease, scholars observed over 17,000 patients receiving medical treatment through the Kaiser Permanente Medical Care Program in San Diego (Felitti et al., 1998). Through a collaboration with the National Center for Chronic Disease Prevention and Health Promotion (Felitti et al., 1998), researchers set clear distinctions in defining numbers of adverse exposures during childhood—deeming these exposures as Adverse Childhood Experiences (ACEs). ACEs include traumatic experiences of physical, verbal, or sexual abuse, physical and emotional neglect, as well as negative early experiences of domestic dysfunction in the household environment (Felitti et al., 1998). Results from this longitudinal study that spanned more than a decade showed that two-thirds of the sample confirmed exposure to at least one ACE. Of those that verified one ACE, 87% reported at least one additional exposure to an ACE category. According to the Felitti et al. (1998) traumatic events in the household was highly prevalent, including a high prevalence of sexual (20.7%), physical (28.3%), and verbal abuse (10.6%) (Anda, 2006; Anda, Brown, 2010; Felitti et al., 1998).

The ACE study has advanced research by allowing for the assessment and examination of numerous risk factors in childhood. This study highlights that adverse childhood experiences occur in groups of exposures than in isolation—introducing the ACE scale for use in public health research. In 2009, members of the CDC, WHO, and public health professionals representing countries from around the globe gathered together to structure a framework using the ACE scale as a standardized measure for surveillance to assess the global burden ACEs have on health (Anda, Butchart, Felitti, & Brown, 2010). Given both the comprehensive nature and standardization of the measure, the ACE scale delivers a conventional method to observe disparities in childhood maltreatment between Black and Brown lesbian, gay, bisexual, transgender, queer, intersex, asexual, cis-gender, non-heterosexual and non-cisgender (LGBTQIA+) individuals and Black and Brown cis-gender heterosexual individuals in probability-based samples—contributing to data collection efforts as seen through the Behavioral Risk Factor Surveillance System.

Studies have associated high numbers of ACEs to chronic health conditions (Gilbert et al., 2015), mental illness (Remigio-Baker, Hayes, & Reyes- Salvail, 2014), premature death (Brown et al., 2009; Kelly-Irving et al., 2013), decreased life opportunities (e.g., educational attainment, income, and employment status) (Metzler, Merrick, Klevens, Ports, & Ford, 2017) and health risk behaviors (e.g., cigarette smoking, alcohol abuse, and sexual risk behaviors) (Felitti et al., 1998). The strong relationship between high numbers of ACEs and poor health outcomes has severe implications for a state's public health and health care system (Holman et al., 2016).

While all individuals may be at risk of experiencing early adversity in their lifetimes,

Some racial/ethnic groups may be at higher risk (Ports et al., 2017). More specifically, minority group membership is often associated with increased physical health challenges and more significant mental health risks (Ports et al., 2017). Adverse childhood experiences (ACEs) have long been associated with mental health challenges, or depression, in adulthood with individuals being more likely to suffer from depression than a person who has no number of ACEs (CDC, 2013c; Chapman et al., 2004; De et al., 2013; Finkelhor et al., 2013; Metzler et al., 2017; Remigio-Baker et al., 2014). However, research investigating the relationship between health risk behaviors, self-reported mental health status and certain types of ACEs among Black men is limited (Remigio-Baker et al., 2014; Ports et al., 2017). According to the CDC (2013), ACEs are traumatic experiences and are known to have a profound negative impact on a child's developing brain and body lasting throughout a lifetime (Felitti, 1998, CDC, 2013c).

ACEs Conceptualization by Category

ACEs can be characterized as *direct* or *environmental*, which can offer a more streamlined view to determine the possible impact on an individual's physical and mental health (Utah Department of Health, 2015). By categorizing ACEs by type, unique pathways can be explored to better understand how early adversity may increase the likelihood of future negative health consequences and impact health risk behaviors among Black men. For this study, direct ACEs are defined as childhood exposure to physical, sexual, or verbal abuse (Felitti, 1998, Utah Department of Health, 2015). Environmental ACEs, for this study, are defined as childhood exposure to household adults living with a mental illness, living with a substance use disorder, experiencing an alcohol problem or living with an alcohol addiction, experiencing divorce, engaging in domestic violence and undergoing the experience of household member incarceration (Felitti, 1998, Utah Department of Health, 2015).

Direct ACE: Physical Abuse

Physical abuse is the use of violence towards a child that ends in or has the potential to end in, bodily harm (CDC, 2019a; Leeb, Paulozzi, Melanson, Simon, & Arias, 2008). Physical abuse ranges from acts that do not leave a visible mark on the child to acts which cause permanent disability, disfigurement, or death (Barnett, Manly, Cicchetti, 1993). Physical abuse can result from discipline or punishment (ACF, 2002). Physical acts can include hitting, kicking, punching, beating, stabbing, biting, pushing, shoving, throwing, pulling, dragging, dropping, shaking, strangling, choking, smothering, burning, scalding, and even poisoning (Leeb et al., 2008).

Empirical research investigating the ethnic difference in physical abuse is relatively scant, in part because physical abuse frequently occurs in combination with other forms of maltreatment and is thus difficult to study in isolation (Elliot & Urquiza, 2006). Despite inconsistencies that exist regarding the influence cultural differences have on childhood physical abuse, it has become a social norm in the United States to use physical discipline, or corporal punishment, on children (Stoltenborgh et al., 2013), which can range from spankings to more severe forms of punishment (Smith & Brown, 2012).

Childhood abuse can have a detrimental impact on an individual's social, cognitive, and emotional development, with several studies showing its effect persists into adulthood (Dumont & Czaja, 2007; Perez & Widom, 1994; Sperry & Widom, 2013). Additionally, prolonged exposure to stress can change both the architecture of the brain and the physiology of the immune system (Felitti et al., 1998; Karr-Morse & Wiley, 2012; McEwen, 2012; Nakazawa, 2015; Rogosch, Dackis, & Cicchetti, 2011; Shonkoff, Boyce, & McEwen, 2009). For five decades, researchers have explored how the impact of children’s early development—mainly

negative rearing experiences—can rewire developing social and emotional function and the architecture of the brain (Felitti et al., 1998; Flinn, Nepomnaschy, Muehlenbein, & Ponzi, 2011; Karr-Morse & Wiley, 2012; McEwen, 2012; Nakazawa, 2015; Rogosch, Dackis, & Cicchetti, 2011; Shonkoff, Boyce, & McEwen, 2009).

Biomedical researchers and pediatricians agree that physical discipline practices cause potential harm to the way children's brains develop (Flinn et al., 2011). The stress and pain associated with receiving a hit can alter the hypothalamic-pituitary-adrenal (HPA) axis, a series of hormonal channels and nerves that act as a significant part of the neuroendocrine system (Flinn et al., 2011). The neuroendocrine system regulates body processes related to digestion, mood, emotions, sexuality, and the immune system and controls reactions to stress (Flinn et al., 2011).

Children exposed to positive stress in early childhood can help enhance the function of HPA, contributing to the development of lifelong resilience to stress (Flinn et al., 2011). Indeed, toxic stress can result in the HPA axis becoming hyper-reactive in individuals (Flinn et al., 2011). Thus, when parents engage in hitting their children to correct misbehavior, what is not visible is the immediate biochemical response this pain has caused to the child's body and how after a while, will increase the likelihood of physiological and emotional damage (Cicchetti and Rogosch, 2001a; Cicchetti and Rogosch, 2001b; Glaser, 2000; Hart, Gunnar, & Cicchetti, 1996; Sapolsky, 1996; Stein et al., 1997; Tomoda et al., 2009).

During the 1990s, psychology researchers from the University of Rochester explored extensively how harsh physical discipline, toxic stress, and unpredictable environments can impact brain growth (Hyland, Alkhalaf, & Whalley, 2013). Research shows that constant threatening, belittling, or hitting a child releases a biochemical response to stress that can lay the

groundwork for substance and alcohol addiction, aggression, suicide, depression, the inability to regulate impulses, and early onset intrusive, sexual behaviors and thoughts (Hyland, Alkhalaf, & Whalley, 2013). Additionally, according to Hyland, Alkhalaf, & Whalley (2013), insulting and harsh physical discipline can put children at risk for adult heart disease, asthma, and cancer (Hyland, Alkhalaf, & Whalley, 2013). Frankly, the body keeps score (Van der Kolk, 2015).

Researchers from Harvard University Medical School led a study comparing neuroimages of brains from individuals who received corporal punishment, during childhood, and who did not experience harsh physical discipline (Sheu, Polcari, Anderson, & Teicher, 2010; Tomoda et al., 2009; Tomodo et al., 2011). The purpose of the study was to gather insights on the impact stress had on physiological and emotional well-being. The five-year study included more than 100 subjects who received harsh physical discipline during childhood and those who had no exposure to it (Sheu et al., 2010; Tomodo et al., 2009; Tomodo et al., 2011). Researchers scanned the brains of forty-six primarily middle class, well-educated subjects, half of whom received physical discipline during childhood and half who had not (Sheu et al., 2010; Tomodo et al., 2009; Tomodo et al., 2011). The conclusion of the study revealed that all subjects examined were hit at least once a month, throughout several years of childhood (Sheu et al., 2010; Tomodo et al., 2009; Tomodo et al., 2011). As a result, gray-matter volume in portions of the prefrontal cortex was reduced by 19 percent in the individuals who were physically disciplined compared to those who were not hit (Sheu et al., 2010; Tomodo et al., 2009; Tomodo et al., 2011).

The prefrontal cortex is the final maturing piece of the brain. It is associated with executive function, judgment, impulse control, the ability to correct and modify behavior, the ability to make decisions, and being able to infer what others are feeling and thinking (Glaser,

2000; Hart et al., 1996; Sapolsky, 1996; Sheu et al., 2010; Stein et al., 1997; Tomodo et al., 2009; Tomodo et al., 2011). Unfortunately, harsh corporal punishment appears to compromise this maturation process according to the conclusions of the study (Sheu et al., 2010; Tomodo et al., 2009; Tomodo et al., 2011). Additionally, research shows that the stress hormone cortisol is released when children become frightened or when they appear in anxiety-inducing situations, such as being hit or threatened by a parent (Granger, Stansbury, & Henker, 1994; Stein et al., 1997; Strassberg, Dodge, Pettit, & Bates, 1994).

Cortisol, released by the pituitary gland, engages the fight-or-flight response to threats (Glaser, 2000; Granger, 1994; Stein et al., 1997; Strassberg et al., 1994). Children who experience physical discipline do not have the option to flee or fight (Glaser, 2000; Granger, 1994; Strassberg et al., 1994). Many children find they must submit to the harsh experience without blocking, grabbing, or defending their bodies (Glaser, 2000; Granger, 1994; Strassberg et al., 1994). The experience of being physically hit, triggers the release of cortisol, offering children an opportunity to handle the immediate stress and pain (Glaser, 2000; Granger, 1994; Strassberg et al., 1994). When cortisol elevates for only a short period, it is not harmful. In other words, the release of cortisol is useful when setting off episodically (Glaser, 2000; Granger, 1994; Strassberg et al., 1994).

Though, children experiencing prolonged exposure to these kinds of stress inducing experiences, repeated activations of the fear response, elevates the levels of cortisol and is associated with damage to neural networks in a child (Felitti et al., 1998; Flinn et al., 2011; Karr-Morse & Wiley, 2012; McEwen, 2012; Nakazawa, 2015; Rogosch, Dackis, & Cicchetti, 2011; Shonkoff, Boyce, & McEwen, 2009). Furthermore, researchers suggest, constant elevations of cortisol may result in children growing to become desensitized to fear (Flinn et al., 2011). When

this happens, it is easier for children to experience pain and danger and normalize abnormal behavior (Glaser, 2000; Granger, 1994; Strassberg et al., 1994). Therefore, as the release of cortisol remains chronic, the response system can lose its capacity to mount a stress response, undermining a child's ability to cope in the future (Glaser, 2000; Granger, 1994; Strassberg et al., 1994).

Longitudinal studies demonstrate that children with childhood abuse histories are more likely to report low academic success, low social support, experience symptoms of depression and experience the criminal justice system compared to those with no history of abuse (Allwood & Widom, 2013; Fergusson, Boden, & Horwood, 2008; Lansford et al., 2002; Luntz & Widom, 1994; Perez & Widom, 1994; Sperry & Widom, 2013). Additional research confirms that individuals with histories of childhood abuse are more likely to experience difficulties in their adult relationships compared to individuals with no abuse history (Hill et al., 2001; Nelson, Lynskey, Heath, Madden, & Martin, 2010; White & Widom, 2003).

Children who are physically disciplined by their parents are at a higher risk of physically abusing their future children (Stoltenborgh et al., 2013). Researchers have consistently found that more Black parents physically discipline their children than those of other racial/ethnic groups (Berlin et al., 2009; Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). According to data from the US Department of Health and Human Services, from 2003-2013, physical discipline resulted in nearly 280,000 reports of physical abuse against Black children, with more than 758,000 young children entering foster care due to physical and other types of abuse. Also, 3,839 Black children died because of maltreatment, with about 40% being victims of physical abuse—an average of about 380 fatalities per year (DHHS, 2013). According to the 2014 Child Maltreatment Report by the US Children's Bureau, child abuse has experienced a decline, since

2009, but reported rates among Black Americans remain higher than among their White counterparts. The data also suggest that child abuse rates are higher among Black Americans than among White Americans or Hispanics. According to the 2014 report, "Black children had the highest rates of victimization at 15.3 per 1,000 in the population of similar race or ethnicity." (DHHS, 2014). This rate is much higher than the 8.8 per 1,000 for Hispanics or the 8.4 per 1,000 for Whites. (DHHS, 2014). In the most recent, 2017 Child Maltreatment Report by the US Children's Bureau, "American Indian or Alaska Native children have the highest rate of victimization at 15.2 per 1,000 children in the population of the same race or ethnicity; and Black children have the second highest rate at 14.0 per 1,000 children of the same race or ethnicity" (DHHS, 2018). The report also states that more than one-half (53.8%) of perpetrators were women, and 45.3 % of perpetrators were men (DHHS, 2018). This disparity does not only apply to child abuse: the fatality of children from abuse is just as telling. Using the number of victims and the population data to create rates highlights some racial disparity. "The rate of Black child fatalities (5.48 per 100,000 Black children) is approximately 2.8 times greater than the rate of White children (1.94 per 100,000 White children) and 3.4 times greater than the rate of Hispanic children (1.63 per 100,000 Hispanic children)" (DHHS, 2018). "Boys have a higher rate of child fatality than girls; 2.87 per 100,000 boys in the population, compared with 2.19 per 100,000 girls in the population" (DHHS, 2018). The majority of children who die of physical abuse are under age two with nearly one-half (46.6%) of child fatalities occurring with children younger than one-year-old and dying at a rate of 22.77 per 100,000 children in the population of the same age (DHHS, 2018).

Studies show that Black parents report spanking and yelling at children as young as four months, with the frequency rising as the child gets older (Day, Peterson, & McCracken, 1998;

Giles-Sims, Straus, & Sugarman, 1995; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Straus & Stewart, 1999). Physically abused children are also more likely to engage in sexual risk behaviors, as adults, engage in smoking, and misuse alcohol than children who were not abused (Taylor & Balkarin, 2011). Children who experience physical abuse suffer short term impacts like physical injuries as well as long-term impacts which can include incarceration, low academic performance, engagement in sexual risk behaviors, drug addiction, and depression (Jones, 2009; Smith & Brown, 2012). Researchers agree that it is of critical importance to examine physical abuse and the impact this type of abuse has on future mental health outcomes (Jones, 2009; Smith & Brown, 2012).

Direct ACE: Verbal Abuse

Verbal abuse is an intentional adult, family friend, relative, or other caregiver action that conveys to a child that they are unloved, endangered, unwanted, flawed, worthless, or valued only in meeting another individual's needs (CDC, 2019a; Kairys & Johnson 2002; Leeb et al., 2008). Verbal abuse can be chronic, pervasive, or brought about by a specific context or situation (CDC, 2019a; Kairys & Johnson 2002; Leeb et al., 2008). Verbal abuse is not as easily recognizable or defined as physical abuse. It is also difficult to gauge the impact that verbal abuse has on its sufferers, yet it is much more common than physical abuse (Bennetts, 2006; Hutchinson & Mueller, 2008). According to researchers (Teicher, Samson, Polcari, & McGreenery, 2006; Vissing, Straus, Gelles, & Harrop, 1991), verbal abuse, has prolonged consequences over any other form of abuse. Verbal abuse is part of psychological abuse or what some researchers refer to as emotional abuse due to the adverse impact verbal abuse has on the emotional well-being of the person (Brendgen, Wanner, & Vitaro, 2006).

When an adult, family friend, relative, or other caregiver engages in verbal abuse, words, or phrases, spoken commonly are said rather seriously, are repeated consistently, and are not later restated by the person that said them (Horwitz, 2005). Lane's (2003) definition of verbal abuse includes the use of insulting or critical actions. Using the word "actions" keeps the definition of verbal abuse open to include words as well as other actions such as voice or tone of voice, body language, and facial expressions. Examples may include subtle gossip, rumors, and comments (Brennan, 2001, 2003). Verbal abuse can also include scolding, swearing, insulting, yelling, threatening, shaming, harmful comparing, name-calling, teasing, criticizing, and blaming (Brendgen et al., 2006; Gadit, 2011; Teicher et al., 2010).

Brennan (2003) pointed out that triggers for verbal abuse include: situations that may cause emotional or psychological distress, anger, confusion, perceived injustice, means of dominations, poor communication skills, mental health problems, and the use of alcohol and drugs. Other studies have shown that factors associated with verbal abuse are living in poverty, foster care placement, divorce, having a parent living with a substance use, and experiencing family member incarceration (Sternberg et al., 1993). Empirical research investigating the ethnic difference in verbal abuse is relatively scant, in part because verbal abuse can occur in combination with other forms of maltreatment and is thus difficult to study in isolation (Elliot & Urquiza, 2006). Researchers highlight the importance of understanding verbal abuse and the impact this type of abuse has on future mental health outcomes (Jones, 2009; Smith & Brown, 2012).

Direct ACE: Sexual Abuse

Child sexual abuse is an attempted or completed sexual act, sexual contact with, or exploitation of a child by an adult, family friend, relative, other caregiver, or stranger (CDC,

2019a; Leeb et al., 2008). Child sexual abuse is a multi-faceted life experience and is prevalent across genders, cultures, all levels of socio-economic status and different ages (Wright, 2015). Most sexual abuse happens during childhood, with incest being the most common type of sexual abuse experienced (Malz, 2012). Research suggests that one in four females and one in six males experience sexual abuse before their 18th birthday in the U.S. (Finkelor et al., 2016). The actual rates of child sexual abuse are unknown and nameless because of the absence of reported cases and underreporting (Gray, 2016). Finkelhor, Shattuck, Turner, and Hamby (2014) articulated that perpetrators tended to violate victims and typically go without being caught or charged legally because the victim usually knows the perpetrators. When the victim knows the perpetrators, the victims are reluctant to report because they might be afraid no one will believe them. When the victim and the family know the perpetrator, it decreases the likelihood of disclosure (Murray, Nguyen, & Cohen, 2014).

Sexual abuse manifests in many ways, and some signs are apparent while others are not. Furthermore, there are inconsistencies (Murray, Nguyen, & Cohen, 2014; Wright, 2015) related to identifying sexual child abuse where it occurs, rates, and the incidence of sexual abuse among children—which might be higher than what exists in current data. According to Foston (2003) significant reasons Black males in America, specifically, experience increased rates of sexual abuse is due to Black boys indiscriminately arrested at an early age and sent to local or state facilities where they are subjugated to routinely being raped or sexually assaulted.

According to Salmon-Davis, Davis, & Davis (1999), “Black boys who experience sexual abuse have been understudied, underreported, and under responded to.” Sexual abuse towards Black males often occurs in group home settings, foster homes, and rehabilitative centers due to the lack of quality of care or the constant supervision (Foston, 2003). According to data collected

from the U.S. Department of Health and Human Services, from 2003-2013, more than 758,000 young children entered foster care due to physical and other types of abuses (DHHS, 2013). Sadly, Black boys find themselves overrepresented and the most unwanted in foster care (Miller, Farrow, Meltzer, & Notkin, 2014).

Black children are generally less desirable to be adopted than White children, yet Black girls are twice as likely to receive an application for adoption as Black boys (Felli, Yariv, Collard-Wexler, & Baccara, 2010). This lack of desirability for adoption makes Black boys especially vulnerable to multiple unsupervised interactions with adults in homes that increase their vulnerability to sexual abuse (Felli et al., 2010; Foston, 2003; Miller, Farrow, Meltzer, & Notkin, 2014). The sexual abuse of Black boys and the ways this type of violence impact their socialization and mental health into adulthood is practically nonexistent within the general academic literature and is rarely written about with any degree of empirical certainty in Black masculinity literature (Cole & Guy-Sheftall, 2009; Curry, 2017).

Black boys experience sexual abuse, mainly in isolation with very little access to professional resources or social networks that understand and can speak to the reality of male victims of sexual abuse. Black boys, in the literature, show signs of anger, distrust, and depression following reports of abuse. Furthermore, the variability of child sexual abuse incidences is attributed to the lack of consensus in the definitions of sexual abuse as it pertains to children (Collin-Vezina, Daigneault, & Hebert, 2013). The World Health Organization (WHO) (2014) define child sexual abuse as involving a child in sexual activity that they do not fully understand, is unable to provide informed consent to, or for which the child is not prepared, developmentally, and cannot give consent, or that violates the social taboos or laws of society.

The American Psychology Association (2019) defines child sexual abuse as the unwanted sexual activity that involves a perpetrator using force, taking advantage of, or making threats to victims who have not given consent. DHHS (2018) defines child sexual abuse as " the involvement of the child in sexual activity to provide a financial benefit or sexual gratification or to the perpetrator, including contacts for sexual purposes, molestation, statutory rape, prostitution, pornography, exposure, incest, or other sexually exploitative activities." Although some have questioned the accuracy and clarity in clearly defining behaviors associated with child sexual abuse, there is a consensus that sexual intercourse with a child is sexual abuse and will impact the child adversely (Collin-Vézina, Daigneault, & Hébert, 2013; Wright, 2015)

Environmental ACE: Household Member Mental Illness

The term "household member" in research of this nature most often refers to a mother living with a mental illness. Fathers living with a mental illness are neglected within this area of research, although there are a handful of studies which do include fathers (Downey & Coyne, 1990; Nicholson, Nason, Calabresi & Yando, 1999; Reupert & Maybery, 2009; Styron, Pruett, McMahon & Davidson, 2002). This inequality within research has led to claims that paternal mental health does not impact the child (Smith, 2004), although that is unlikely, given previous research. According to Adamson and Johnson (2013), father involvement, has significant, positive impacts on child emotional well-being. Also, research suggest, that the frequency of father-child contact alone does not predict child mental well-being (Dale, 2018). According to Brown et al. (2012) the culmination of both the quality and quantity of fathering overtime, or the presence of a secure attachment, is predictive of child-well-being. Thus, the status of a father's mental health can impact the child.

According to Rowe, Holton, and Fisher (2013), the demands that follow the transition to parenthood may increase a father's risk and vulnerability to anxiety, stress, or depression. A meta-analysis on paternal perinatal depression revealed prevalence rates between 2 to 25 percent, demonstrating paternal distress is high during the first year postpartum (Giallo et al., 2014). Additionally, fathers are at increased risk for experiencing depression often due to female partners who are already experiencing depression. Furthermore, despite scant research on fathers, paternal mental illness, specifically, is associated with a two-to-three-time greater likelihood of their children developing a mental illness themselves (Maybery et al., 2009; Meltzer et al., 2003).

Research has shown that several areas of parenting are affected by mental illness (Falkov, 1997; Jacobsen & Miller, 1998; Maybery & Reupert, 2006). Parents living with a mental illness is associated with child abuse and neglect (Falkov, 1997; Jacobsen & Miller, 1998). Parents living with mental illness have also been found to use physical punishment with their children more often than parents living without mental illness (Nobes & Smith, 1997). Adult mental health workers have highlighted that parents can have diminished insight into their mental illness, as well as a lack of insight into the possible impact of their illness on their children (Maybery & Reupert, 2006). In their comprehensive review of research examining parenting and mental illness, Oyserman, Mowbray, Meares, and Ferminger (2000) found that, in comparison to parents without a diagnosis of mental illness, parents living with a mental illness were less responsive to their infants, less emotionally available and less involved with their preschoolers, and less encouraging with their school-aged children. Also, parents living with a mental illness, in comparison to parents without a diagnosis of mental illness, were found to be less happy, less talkative with their children, more critical with their children and found to have

difficulty sustaining familial interactions (Oyserman et al., 2000). Also, environmental factors, are often found to be associated with parents living with a mental illness, such as living in a stressful situation, low socioeconomic status, domestic violence, and divorce (Goodman & Gotlib, 1999; Smith, 2004). These factors and childhood exposure to a parent living with a mental illness can increase the risk for abuse, specifically physical, verbal and sexual abuse (Jones, 2009; Medley & Sachs-Ericsson, 2009; Sachs-Ericsson et al., 2012; Smith & Brown, 2012; Wright, 2015). Childhood exposure to a parent living with a mental illness can result in children experiencing trauma during early, vulnerable years and has been shown to disrupt brain development, which has been associated with cognitive impairments and later development of a mental illness (Hyman, Paliwal, & Sinha, 2007).

Children exposed to parents living with a mental illness during critical developmental stages are at risk for disruptions and alterations in their neurobiological development, which may be the reason for a higher chance of developing cognitive and social impairments, anxiety, depression, or other psychopathologies throughout the lifespan (Heim & Nemeroff, 2001, Teicher et al., 2002, Dube et al., 2003). Researchers agree that it is not usually the mental illness itself that affects children (Heim & Nemeroff, 2001, Teicher et al., 2002, Dube et al., 2003). Instead, it is behaviors associated with the most prominent symptoms. Thus, Black men must receive the necessary mental health support since one possible behavioral manifestation of symptoms resulting from a lack of support is substance misuse.

Environmental ACE: Household Member Substance Misuse

A substantial body of literature demonstrates that parental substance misuse causes a variety of problems in family dynamics. Clinical studies have emphasized dysfunctional internal and external boundaries (Isaacson, 1991; MacKensen & Cotton, 1992), poor communication

skills, low expressiveness, and high rate of family conflict (Crnkovic & DelCampo, 1998; Hogan, 1998; Isaacson, 1991); chaotic or rigid interaction patterns (Dore, Kauffman, & Nelson-Zlupko, & Granfort, 1996; National Center on Child Abuse and Neglect (NCCAN), 1994); and role distortion and role reversal (Bekir, McLellan, Childress, & Gariti, 1993; Cook, 1991; Dore, Kauffman, & Nelson-Zlupko, 1996). Low levels of family competence and adverse family environments have also been linked to parental substance misuse (Crnkovic & DelCampo, 1998; Sheridan, 1995). Empirical studies have found dysfunctional family relations (Lavee & Altus, 2001), low levels of family cohesion and adaptability, and co-dependent relations for household members living with a substance use disorder.

Children whose parents misuse substances are at high risk for neglect and abuse (Dore, 1995; Famularo, Kinscherff, & Fenton, 1992; Sheridan, 1995; Wilens, Biderman, Kiely, Bredin, & Spencer, 1995; Wolock & Magura, 1996) and a chaotic child-rearing environment (Garbarino & Vondra, 1987). These children may experience developmental impairments and show behavioral problems (Clark, Moss, Kirisci, Mezzich, Miles & Ott, 1997; Hogan, 1998; NCCAN, 1994; Rivinus, Levoy, Matzko, & Seifer, 1992; Wilens et al., 1995). Almost 30% of children in the US grow up with a household member living with a substance use disorder (CDC, 2010). For families involved in the court system, with one parent having alleged substance misuse issues, the proportion may be as high as 50% (Murphy et al., 1991). Children growing up with parents who have substance use disorders are at heightened risk for being exposed to other adversities, such as physical, verbal, or sexual abuse (Sheridan, 1995, Wolock & Magura, 1996). This co-occurrence of different types of adversity is in Kessler's 1997 study on ACEs and adult psychiatric disorders; research shows that adversities tended to cluster, meaning when children experience severe adversity such as sexual abuse, they are likely to be experiencing many other

adversities as well (Kessler, Davis, & Kendler, 1997). Children of parents with substance use disorders have a higher chance of developing substance use disorders throughout their own lives, thus continuing the cycle (Sheridan, 1995). Treatment programs often target the behavior itself: rehabilitation programs for substance misuse. However, in most cases, substance treatment programs may not account for ACEs Black men may have experienced.

Environmental ACE: Household Member Alcohol Misuse

Excessive alcohol misuse was associated with nearly 88,000 deaths and 2.5 million years of potential life lost (YPLL) per year in the U.S. between 2006 – 2010, decreasing the life expectancy of those who died by an average of 30 years (CDC, 2010b; Stahre, Roeber, Kanny, Brewer, & Zhang, 2014). Further, drinking in excess was responsible for 1 in 10 deaths among working-age adults aged 20-64 years (CDC, 2010b). An estimated $249 billion account for economic costs expended due to excessive alcohol consumption in 2010 (Sacks, Gonzales, Bouchery, Tomedi, & Brewer, 2015).

Several studies have revealed associations between combined and individual early adversities to outcomes, such as binge drinking, early initiation of alcohol use, and heavy episodic drinking (Dube et al., 2003; Rothman et al., 2008; Shin, Edwards, & Heeren, 2009). Further, studies have associated high numbers of ACEs to health risk behaviors (i.e., alcohol use, binge drinking, and heavy episodic drinking behaviors) (Felitti et al., 1998). The strong relationship between high numbers of ACEs and poor health outcomes has severe implications for a state's public health and health care system (Holman et al., 2016). Evidence regarding the relationship between ACEs and alcohol, among Black males, concerning mental health challenges in adulthood, is currently limited (Lee, & Chen, 2017; Zapolski, Pedersen, McCarthy, & Smith, 2014).

Environmental ACE: Divorce

In the late 1990s, Dr. Vincent Felitti and Dr. Robert Fonda conducted the Adverse Childhood Experiences study (Felitti et al., 1998). The ACEs research highlighted the negative impacts of specific adverse childhood experiences, which included divorce as one of the childhood adversities (Felitti et al., 1998). The impact of divorce has been shown to create excessive amounts of unhealthy stress in a child's life and impact the emotional well-being of the caregiver (Felitti et al., 1998; Shonkoff, Boyce, & McEwen, 2009). Divorce, what it entails, and what follows can cause a great deal of stress for spouses (Karr-Morse & Wiley, 2012; Nakazawa, 2015). Some divorces can be deemed more toxic than others, but almost all divorces involve some level of extreme stress (Collingwood, 2018; Karr-Morse & Wiley, 2012; Nakazawa, 2015).

The issue with a divorce that often is missing in the literature is its impact on Black men's emotional well-being (Lawson & Thompson 1996). According to a qualitative study conducted by Lawson & Thompson (1996), Black men experience severe psychological stress associated with divorce. The study's findings show that experiences that exacerbate psychological symptoms include: (1) perception of losing a place in their child's life; (2) reluctance to admit to divorce; (3) respondent's belief of racial biases in court-ordered rulings related to child support payments; and (4) the belief in the stability of marriage. The heightened focus on divorce makes it difficult for the parent to focus on their children's needs. However, the Lawson & Thompson study suggests Black men are more likely to relinquish material possessions to meet their children's needs during a divorce (e.g., the home or car to the mother). Yet, children's prolonged exposure to the adverse impacts of divorce is associated with high levels of toxic stress (Felitti et al., 1998; Karr-Morse & Wiley, 2012; McEwen, 2012; Nakazawa, 2015; Rogosch, Dackis, & Cicchetti, 2011; Shonkoff, Boyce, & McEwen, 2009). Furthermore, children will often feel that

they are responsible for their parents' breakup, feel pressure to side with one parent versus the other, and may witnesses intimate partner violence because of the stress of the divorce on the parents (Nakazawa, 2015; Rogosch, Dackis, & Cicchetti, 2011; Shonkoff, Boyce, & McEwen, 2009).

Environmental ACE: Domestic Violence

Many children in the U.S. are growing up in homes where they witness or experience violence (Arrington & Wilson, 2000; Finkelhor, Turner, Ormrod, & Hamby, 2009; Gewirtz & Edelson, 2004; Hamby, Finkelhor, Turner, & Ormrod, 2011; Summers, 2006). Repeated experiences with violence and trauma can impact children's mental health, their ability to succeed in school, and increase their likelihood of becoming victims or perpetrators of violence (Gewirtz & Edelson, 2004; Hamby, Finkelhor, Turner, & Ormrod, 2011; Hurt, Malmud, Brodsky, & Giannetta, 2001; Summers, 2006). About 18%, or 13.6 million children experience domestic violence during their lifetime, (Hamby, Finkelhor, Turner, & Ormrod, 2011). Children who experience domestic violence exhibit significantly higher levels of behavioral and emotional problems than their non-exposed peers (Aviles, Andesron, & Davila, 2006). Experiencing domestic violence has been associated with more negative remarks in cumulative student records, lower grade-point averages, and higher reports of absences from school (Hurt, Malmud, Brodsky, & Giannetta, 2001). Domestic violence experiences left unaddressed have serious consequences for children's ability to lead a healthy life and contribute positively to their community. Youth ages 10 to 17 who had to engage in delinquent behavior report higher rates of exposure to violence than their peers who report little or no delinquent behavior. (Cuevas, Carlos, Finkelhor, Shattuck, Turner, & Hamby, 2013). The landmark Adverse Childhood Experiences (ACES) study found a significant relationship between childhood experiences of

domestic violence and negative adult mental and physical health outcomes, including heart disease, stroke, diabetes, suicidal attempts, depression, sexual risk behaviors, and substance and alcohol misuse (Felitti et al., 1998). Furthermore, individuals who witness violence in childhood are at a higher risk of becoming incarcerated in adulthood. (Arrington & Wilson, 2000; Cuevas et al., 2013; Felitti et al., 1998; Finkelhor, Turner, Ormrod, & Hamby, 2009; Gewirtz & Edelson, 2004).

Environmental ACE: Household Member Incarceration

Research demonstrates that one out of every 100 adults is behind bars, with the U.S. leading the world in incarceration (Rich, Wakeman, & Dickman, 2011; Glaze & Parks, 2012). There is increasing attention to the relationships between health disparities and incarceration. Research on household member incarceration and its negative impact on young children continues to increase (Foster & Hagan, 2009; Geller, Garfinkel, Cooper, & Mincy, 2009; Murray, Farrington, & Sekol, 2012; Lee, Fang, & Luo, 2013; Schwartz-Soicher, Geller, & Garfinkel, 2011; Wakefield & Wildeman, 2011; Wildeman, 2009).

At the start of the 1970s, incarceration expanded rapidly, while ethnic and racial disparities within incarceration grew concurrently. Disparities grew aggressively primarily due to the war on drugs, which disproportionately targeted Hispanic and Black individuals (Alexander, 2012). Despite SAMHSA's consistent evidence that Black and Hispanic adults do not misuse substances more than White adults, between 1980 and 2007, Black adults experienced arrests on drug charges at rates 2.8 to 5.5 times higher than Whites (Tables, 2010; Fellner, 2009). By 2009, the incarceration rate for Black males was 3,119 per 100,000 Black males, and the incarceration rate for Hispanic males was 1,193 per 100,000 Hispanic males, compared with the White male rate of 487 per 100,000 (Sabol, West, & Cooper, 2009). Legal scholars have illustrated how

racial differences in incarceration and arrest can occur despite a purportedly race-neutral law enforcement and criminal justice system (Alexander, 2012). Also, these racial/ethnic differences in rates of incarceration suggest that Hispanic and especially Black children are at a higher risk of witnessing the incarceration of a parent or other family member, compared to White children. A study examining a 1990 birth cohort revealed that while White children showed a 3.6–4.4% cumulative risk of experiencing the incarceration of a parental figure by 14 years of age, Black children had a 25–28% cumulative risk, that was part of the same cohort (Wildeman, 2009).

Moreover, the high rise in rates of incarceration rates in the 1980s suggests that numbers of children with an incarcerated family member have increased dramatically over the past 30 years (Wildeman, 2009). Population health datasets very rarely include the history of incarceration, making it a challenge to measure the relationship between health outcomes, incarceration, health risk behaviors, and health disparities (Ahalt, Binswanger, Steinman, Tulsky, & Williams, 2012; Wang, E. A., & Wildeman, 2011). However, there is strong evidence of the adverse effects of incarceration on social determinants of health such as homelessness, marriage, and employment status (Pager, Western, & Sugie, 2009; Massoglia, 2008; London & Myers, 2006; Massoglia, Firebaugh, & Warner, 2013). Incarceration, a disruptive life event typically experienced disproportionately by young Hispanic and Black men, may also be contributing to health disparities throughout the U.S. A child's welfare is affected in many ways after experiencing the incarceration of a family member and evidence suggests that the net effect of incarceration on children's growth and development is harmful (Wakefield & Wildeman, 2011). Household member incarceration is associated with children's increased aggression, depression, and anxiety (Geller, Garfinkel, Cooper, & Mincy, 2009; Santos, 2007; Wakefield & Wildeman, 2011; Wildeman & Western, 2010). Children's well-being is affected through multiple pathways,

including the traumatic removal of the family member, reduced economic resources, and stigmatization (Comfort, 2007; Nichols & Loper, 2012). Though longitudinal studies are tracking the children of incarcerated parents (Wildeman & Western, 2010), there are still limited means for quantifying the long-term effects of incarceration on the health and well-being of the incarcerated family member and their families. Recently, researchers added Adverse Childhood Experiences (ACE) optional module to the Behavioral Risk Factor Surveillance System (BRFSS). The optional module allows for assessment of childhood impact later in life, from having a family member incarcerated. Elsewhere, data show that this adverse childhood experience is associated with specific health behaviors such as substance use, smoking, and heavy drinking in adulthood (Roettger, Swisher, Kuhl, & Chavez, 2011; Gjelsvik, Dumont, & Nunn, 2013).

Prevalence of ACEs

ACEs are frequent within the general population (Chartier, Walker, & Naimark, 2010; Felitti et al., 1998; Flaherty et al., 2006; Flaherty et al., 2013; Ippen, Harris, van Horn, Lieberman, 2011). The most common type of ACE is child maltreatment (Sacks, Murphey, & Moore, 2014). In 2012 in the US, both local and state child protective services responded to an estimated 3.8 million reports of child maltreatment (Sacks et al., 2014). Child maltreatment is characterized as neglect, physical, sexual, or verbal abuse (Felitti et al., 1998; Flaherty et al., 2006; Flaherty et al., 2013; Ippen et al., 2011; Sacks et al., 2014). In 2012, the rate of corroborated reports of child maltreatment among children ages 0-17 were 9.2 per 1,000 children (Flaherty et al., 2006; Flaherty et al., 2013; Ippen et al., 2011; Sacks et al., 2014). Nationally, victims who experienced neglect made up 78.3%, those that were abused physically made up

18.3%, 9.3% suffered sexual abuse and 8.5% were maltreated psychologically (Flaherty et al., 2006; Flaherty et al., 2013; Ippen et al., 2011; Sacks et al., 2014)

Epidemiological studies of adolescents report an 8% lifetime prevalence rate for sexual abuse, with a physical abuse rate of 17%, and among those individuals that have witnessed violence a rate of 40% (Flaherty et al., 2013). Among adult responders of the ACE study, 30% confirmed exposure to physical abuse as a child, 24% reported exposure to alcohol abuse within their family, 20% confirmed sexual abuse and 13% reported they witnessed domestic violence (Felitti et al., 1998; Van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005).

In 2012, Black and American Indian/Alaska Native children had the highest rates of substantiated reported maltreatment at 14.2 and 12.4 per 1,000 respectively (Flaherty et al, 2006; Flaherty et al., 2013; Ippen et al., 2011). The rate for White children was 8.0, for Hispanic children, 8.4, and among Asian children, 1.7 (Flaherty et al., 2006; Flaherty et al., 2013; Ippen et al., 2011). Removal from out of a home or the act of being placed in foster care can cause substantial trauma for children (Finkelhor, 2013; Bramlett, 2014; Whitfield, 1998).

Researchers have argued that institutional discrimination and experiences with racism result in disproportionate referrals of Black children to the child welfare system (Bullock; 2003; Dixon, 2008; Dorch, 2010; Drake et al., 2011; Morton, 1999). Despite this argument, the National Incidence Study of Abuse and Neglect (NIS) data show that actual rates of maltreatment do not differ across racial groups (Dixon, 2008). However, child maltreatment rates among Black children remain higher than those of White children (DeBruyan et al., 2001).

ACEs and Chronic Medical Conditions

The impact of ACEs on physical health was not explored until 1995 (Finkelhor et al., 2013) when the CDC launched the most extensive investigation on various adult health outcomes

and adverse childhood experiences, coined as The ACE Study (Felitti et al., 1998). The study observed the association between dysfunction within the household and childhood abuse as the leading causes of death among a sample of 9,508 adults (i.e., with a mean age of 56.1 years) at a large Health Management Organization (HMO) in San Diego (Felitti et al., 1998; Flaherty et al, 2006; Flaherty et al., 2013; Ippen et al., 2011). Dysfunctions in the household refer to childhood exposure to household adults living with a mental illness, living with a substance use disorder, experiencing an alcohol problem or living with an alcohol addiction, experiencing divorce, engaging in domestic violence and undergoing the experience of household member incarceration (Felitti et al., 1998; Flaherty et al., 2006; Flaherty et al., 2013; Ippen et al., 2011).

Researchers discovered a strong relationship between the number of ACEs and a higher risk of adverse health-related outcomes in adulthood (Felitti et al., 1998). The ACE study revealed that respondents with four or more ACEs had substantially higher risks for several chronic diseases, injuries, and health risk behaviors (Chapman et al., 2004; Felitti et al., 1998), with adjusted odds ratio for cancer 1.9 (CI 1.3-2.7), stroke 2.4 (CI 1.3-45), heart disease 2.2 (CI 1.3—3.7), and diabetes 1.6 (CI 1.0-2.5) compared to those who reported no ACEs (Felitti et al., 1998). This study and subsequent studies also demonstrated clear evidence that *direct or environmental* ACEs rarely occur in isolation and are more commonly comorbid (Felitti, et al., 1998; Finkelhor et al., 2013; Ramstad et al., 2004; Van der Kolk et al., 2005).

ACEs and Health Risk Behaviors

ACEs are traumatic experiences and are known to have profound impacts on a child's developing brain and body lasting throughout a lifetime. A number of studies have also revealed associations between combined and individual early adversity to health risk behaviors such as heavy drinking (Dube, Felitti, Dong, Giles, & Anda, 2003; Rothman et al., 2008; Shin, Edwards,

& Heeren, 2009), smoking (Annerbäck, Sahlqvist, Svedin, Wingren, Gustafsson, 2012; Edwards, Anda, Gu, Dube, & Felitti, 2007; Ford et al., 2011; Moran, Vuchinich, & Hall, 2004), and sexual risk behaviors (Bensley, Van Eenwyk, & Simmons, 2000; Dube et al., 2003; Felitti et al., 1998) all practices that can negatively impact mental health. Despite this evidence, the association between certain types of ACEs and certain health risk behaviors (i.e., smoking, drinking, sexual risk behaviors) is limited for Black males in relation to their self-reported mental health status (Gilbert et al, 2015; Roxburgh & MacArthur, 2014; Ward, & Mengesha, 2013). Further, few studies exist on the association between certain types of ACEs and the mental well-being of Black males, or how these types of ACEs may be mediated by health risk behaviors (Gilbert et al., 2015; Roxburgh & MacArthur, 2014; Ward, & Mengesha, 2013). ACEs frequently co-occur and no unique synthesis exist describing the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions, and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data (CDC, 2013c).

ACEs and Smoking Behavior

Cigarette smoking is one significant leading cause of preventable disease and death in the U.S., accounting for more than 480,000 deaths every year, or about 1 in 5 deaths (CDC, 2017; DHHS, 2014). Despite cigarette smoking, declining from 20.9% (nearly 21 of every 100 adults) in 2005 to 15.5% (more than 15 of every 100 adults) in 2016, tobacco sales remain on the rise (Blackwell, Lucas, & Clarke, 2014; CDC, 2017; Nguyen, Marshall, Hu, & Neff, 2015) Increases in the use of these products are troubling due to the historical associations to elevated risk for cancers (Holman et al., 2016; HHS, 2014). Given the rise of tobacco products, it is crucial to

understand the potential underlying risk factors for smoking (Holman et al., 2016; Nguyen et al., 2015).

One risk factor that has garnered significant attention, as it relates to tobacco use is adversity during childhood. ACEs have been associated with use of tobacco products (i.e. cigarettes) among adults and adolescents (Annerbäck et al., 2012; Moran et al., 2004; Ford et al., 2011). Individuals living with conditions that may contraindicate smoking (i.e., heart disease, lung disease, etc.), experience a higher number of ACEs and increased odds for smoking (Edwards et al., 2007, Ford et al., 2011). However, despite this evidence limited research exists about the association between ACEs and current smoking behaviors among Black males and their mental health status (Ford et al., 2011; Gilbert et al., 2015; Roxburgh & MacArthur, 2014; Ward, & Mengesha, 2013). Developing an illness related to smoking is considered an indicator of the presence of a health risk behavior but additional research is needed to understand added complex associations between ACEs, mental health status, and current smoking behaviors among Black males (Alcalá, Sharif, Albert, 2015; Ford et al., 2011; Holman et al., 2016).

ACEs and Drinking Behavior

Excessive alcohol misuse was associated with nearly 88,000 deaths and 2.5 million years of potential life lost (YPLL) per year in the U.S. between 2006 – 2010, decreasing the life expectancy of those who died by an average of 30 years (CDC, 2010b; Stahre, Roeber, Kanny, Brewer, & Zhang, 2014). Further, drinking in excess was responsible for 1 in 10 deaths among working-age adults aged 20-64 years (CDC, 2010b). An estimated $249 billion account for economic costs expended due to excessive alcohol consumption in 2010 (Sacks, Gonzales, Bouchery, Tomedi, & Brewer, 2015).

Several studies have revealed associations between combined and individual early adversities to outcomes, such as binge drinking, early initiation of alcohol use, and heavy episodic drinking (Dube et al., 2003; Rothman et al., 2008; Shin, Edwards, & Heeren, 2009). Further, studies have associated high numbers of ACEs to health risk behaviors (i.e., alcohol use, binge drinking, and heavy episodic drinking behaviors) (Felitti et al., 1998). The strong association between high numbers of ACEs and poor health outcomes has severe implications for a state's public health and health care system (Holman et al., 2016). Evidence regarding the relationship between ACEs and alcohol, among Black males, concerning mental health challenges in adulthood, is currently limited (Lee, & Chen, 2017; Zapolski, Pedersen, McCarthy, & Smith, 2014).

ACEs and Sexual Risk Behaviors

According to estimates from the CDC there exist approximately 20 million new STD infections each year—with almost half among young people aged 15 to 24 (CDC, 2013b; ODPHP, 2018; Satterwhite et al., 2013). Untreated STDs may lead to severe long-term health consequences (ODPHP, 2018). Researchers report that at least half of all HIV patients are age 25 years old and younger (CDC, 2013b; ODPHP, 2018). Additionally, despite sexual behavior being a high priority focus area for researchers, analysis exploring sexual risk behaviors' associations with peers, community, and family has been scarce (Miller et al.,2004).

Sexuality is a vital aspect of life and its expression is significant to the way individuals experience the society in which they live, their culture and familial environment (Askun & Ataca, 2007). Sexual risk behaviors, however, can threaten both the physical and mental well-being of an individual and their social interactions. When individuals engage in sexual risk behaviors and experiences, they increase their risk of unintended health outcomes.

Indeed, exposure to ACEs is associated with increased number of sexual partners, engagement in HIV/AID risk behaviors, and sexually transmitted infections (STIs) (Bensley, Van Eenwyk, & Simmons, 2000; Dube et al., 2003; Felitti et al., 1998). The proximate pathways by which ACEs affects Black male adult behaviors are rarely directly explored, and many plausible paths need examination (Danese & McEwen, 2012).

Implications for Mental Health and the Theoretical Gap

Adult mental health, well-being, and health behaviors can be impacted negatively or positively by the health and well-being of former caregivers (Felitti et al., 1998; Kerr & Bowen, 1988). Research on ACEs document the impact familial influences have on children's health, development, behaviors, and later adult health outcomes (Felitti et al., 1998). Given the significance of appropriately explaining behaviors in health education and promotion, using theory in health research has become standard practice (Sharma, 2017). However, according to Grady, Levenson, & Bolder (2017), an agreed-upon theory for ACEs exploration remains elusive contributing to challenges in establishing effective interventions. Presently, a gap exists in the literature (Grady et al., 2017) as it pertains to examining early adversity, emotional determinants of health, mental health challenges, sociodemographic factors, and mediating health risk behaviors through a theoretical framework. With little theoretical evidence and exploration, there lacks a basis for how to help explain ACEs when accounting for ACEs' relationships between health risk behaviors and self-reported mental health status (Grady et al., 2017). Research, however, has placed great emphasis on early familial influences (John Bowlby, 1982; Kerr & Bowen, 1988), with little attention to the theoretical underpinnings that explain the impact of family influence on later quality of life (Grady et al., 2017). Also, research has documented that Black children's health and well-being are disproportionally impacted by economic, educational,

and health status of their primary caregivers (Cauce, Cruz, Corona, & Conger, 2011; Hodgkinson, Godoy, Beers, & Lewin, 2017; MacKay, 2012; Nichols et al., 2004). Black men are also exposed to higher levels of adversity such as racism and discrimination compared to men of other racial or ethnic groups (Chung et al., 2014; Ports et al., 2017; Matthews et al., 2013; Watkins et al., 2006). More research is needed on the impact of familial influences, through a theoretical viewpoint and the role these influences have towards early adversity, sociodemographic factors, presence of chronic medical conditions, and mediating health risk behaviors along with potential implications for Black men's mental health. To adequately address and offer recommendations for Black men's mental health, potential factors that may affect Black men's mental health, must first be understood and addressed keeping various nuanced contexts related to emotional determinants of health in mind using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data. This study seeks to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions, and health behavioral risks.

Theoretical Perspectives: Adverse Childhood Experiences

Several theories (Burrows, 2004; Caruth, 2016; Di Prete, 2005; Dominick, 2001; Edkins, 2003; Felman & Laub, 1992; Schreiber, 2010) have been utilized to understand trauma better—how adverse childhood experiences exists in earlier literature (Felitti, 1998). According to Grady et al. (2017), an agreed-upon theory of use for ACEs exploration remains elusive contributing to challenges in establishing effective intervention. However, in a review of the literature on the influence of family-of-origin adversity on later adult health outcomes and involvement in relationships built on trauma, Delso & Margolin (2004) identify the main theoretical perspectives used both in this specific context and more generally regarding intergenerational and multi-

generational effects of trauma or early adversity. These are attachment theory (Bar-On et al., 1998), social learning theory (Margolin, Gordis, Median, & Oliver, 2003; Kwong, Bartholomew, Henderson, & Rinke, 2003), and, specifically, family systems theory (Margolin et al., 2003). With any theoretical framework, benefits and limitations must undergo examination with their use.

Bowen Family Systems Theory

According to Minuchin (1985) individuals, within the family structure, specifically, children, are said to be interdependent. Within the context of family, mainly as a subsystem, individual members hold significant roles and occupy a multiplicity of functions. Due to interdependence, the family system can be negatively affected by overexposure to substantial amounts of adverse experiences and stressful living conditions. As a result, it is essential to view investigations that seek to understand these experiences through a framework that can help explain how early adverse experiences can impact the family system and later adult health outcomes.

Given the limited theoretical exploration of ACEs and lacking an agreed-upon theory for examining ACEs this study seeks to utilize and explore a conceptual framework that accounts for the interdependence of the family system and its role in explaining adverse childhood experiences. For this study, we seek to examine ACEs through the framework of the Bowen Family Systems (BFS) theory while exploring the nuanced concept of EDOH. Generally, family systems theory aims to explain the interconnectedness of individual family members and family subsystems to better understand how their shared history, familial bonds, and collaborative coping strategies support the family's functioning. The BFS theory helps frame how family-level

risk and protective factors impede or support their ability to perform essential family functions, such as nurturance, protection, stability, and cohesion (Brodsky, 1999; Patterson, 1991).

Family systems theory (Walsh, 1996), combines developmental and ecological-based perspectives to observe families as an open system that operates relative to its larger sociocultural context evolving over the multigenerational lifespan (Carter & McGoldrick, 1998; Falicov, 1995). A biopsychosocial systems orientation leads this approach, viewing problems and their solutions concerning multiple periodic influences involving people, their families, and the broader social systems. Therefore, symptoms may exist with a biological basis, as in serious illness, or influenced mainly by sociocultural variables, such as barriers like discrimination or SDOH.

Family distress may result from the inability to cope with an overwhelming circumstance successfully. Symptoms may occur from a crisis, such as traumatic loss. A pile-up of internal and external stressor events can overwhelm the family system and increase the risk of subsequent difficulties (Boss, 2001; McCubbin & Patterson, 1983). By considering family system theory as a lens, we can find adaptational family processes over time, from ongoing interactions to the passing down of family lifestyle and multigenerational influences. Life crises and persistent stresses can derail the functioning of a family system, with ripple effects to all members and their relationships. In turn, family processes in dealing with adversity are crucial for coping, and adaptation (McCubbin, McCubbin, McCubbin, & Futrell, 1998; McCubbin, McCubbin, Thompson, & Fromer, 1998); one family may be disabled, whereas another family rallies in response to similar life challenges. How a family confronts and manages a threatening or disruptive experience, buffers stress effectively, reorganizes, and reinvests in life pursuits will influence adaptation for all members and their relationships.

Family functioning is assessed within the context of the familial system, from a multigenerational lens as it travels forward through time, coping with significant events and transitions, including both predictable, normative stresses (e.g., the birth of the first child) and unpredictable, disruptive events (e.g., the untimely death of a young parent). This view can help explain impacts of ACEs in a temporal context, as well as family and social contexts, through a family timeline or a genogram (McGoldrick, Gerson, & Shellenberger, 1999) that could help guide intervention planning.

In their review of the literature on the influence of family-of-origin adversity on later involvement in relationships with trauma, Delso & Margolin (2004) identified family systems theory as a central theoretical perspective used both in the specific context and more generally regarding intergenerational and multi-generational effects of trauma (Margolin et al., 2003).

Exploration of ACEs, mental health status and mediating health risk behaviors among Black men is central to this study through the framework of Kerr & Bowen (1988) conceptual model of multi-generational and emotional processes among children and families. This conceptual model, the Bowen Family Systems theory, accounts for multiple dimensions of familial relationships and their impact and influences on children's early experiences and later adult health outcomes (Bavelas & Segal, 1982; Broderick, 1993; Kerr & Bowen, 1988).

Bowen proposed that a family is an emotional system that leads to growth and development and influences the overall conduct of its members (Bavelas & Segal, 1982; Broderick, 1993; Kerr & Bowen, 1988). He suggests that the experiences between emotionally attached individuals could be distinguished, like the connections between individuals in other enduring systems, concerning a force for individuality and strength for togetherness (Kerr & Bowen, 1988). He named eight theoretical concepts to describe a process whereby the interplay

of these forces operates within families and can impact successful individual and group adaptability to life. These eight interlocking concepts of familial system interaction, which are elaborated below, highlight the family structure and help explain generational transmission of negative emotional experiences, behaviors, and mental health strain in relation to family and individual quality of life (MacKay, 2012; Nichols et al., 2004).

Triangles

The idea of triangles illustrates patterns of anxiety and its transmission. Further, this concept describes anxiety's bond between individuals and the familial control of the individual. Also, triangles represent a relationship involving three individuals that can stabilize a two-person system (dyad) experiencing anxiety. When tension between two people develop, stress can be relieved by the involvement of a third person. The third individual's participation could potentially diffuse the pressure, but the person also has the potential of becoming ‘an odd man out.’ Bowen suggest that 'emotional influences from within the triangle are always in motion’ as the triangle moves back and forth between dyads with one individual eventually becoming the outsider. Bowen maintains that the most common pattern is the father–mother–child triangle, with the tension being between the parents, the father will move to the outside position. Spreading the stress can stabilize a family system but does not resolve the source of the anxiety (Kerr & Bowen, 1988).

Differentiation of Self

While social groups are vital, the family has the main impact on a member’s developing sense of self. The concept of differentiation of self is the capacity to isolate both emotions and thoughts to act mindfully rather than to behave reactively. The poorly-differentiated- self demands acceptance and approval of others for thinking, acting, and speaking. A well-

differentiated person, while acknowledging the importance of family and social groups, can withstand conflict, rejection, and criticism and separate emotionally and intellectually from the family of origin. This capacity is formed by the intense emotional coalescing with other members, determining the level of individual freedom a family member may have to be an individual and to determine their direction when togetherness pressures arise. The familial experiences of both anxiety and stress will increase togetherness pressures, forcing symptoms of all kinds to emerge often. It all points to the degree of fusion and differentiation for the individual. Persons with low differentiation are less flexible and more emotionally dependent on others (Kerr & Bowen, 1988).

Nuclear Family Emotional Process

Nuclear Family Emotional Process details where and how and with which family members' symptoms remain in the nuclear family. Four basic patterns of emotional functioning in a single generation include: marital conflict, dysfunction in one spouse, impairment in on-task behavior in one or more children, emotional distance. Marital conflict is a result of increases in family stress, due to attempts to control one another, with each spouse externalizing their anxiety within the relationship. Dysfunction in one spouse is an outcome of pressures by one spouse to another in attempt to make one act or think in a manner with the other yielding to this pressure. Impairment in behavior of one or more children stems from a parental focus of their own stress and negative assessments placed onto and on one or more children resulting in the child's impaired school performance and negative impacts to the child's physical and mental health. Emotional distance is the individual's voluntary choice of distancing from family members to reduce the anxiety and tension of the familial relationship, even risking isolation. Bowen suggests these emotional patterns operate in intact families, stepparent, single-parent, and other

nuclear family systems. How a family reacts and responds to stress are replicas of past generations and will continue to repeat in future generations. Bowen encourages a careful examination of the history of present generation patterns of stress reactions and responses and a reconstruction of past generation patterns of emotional functioning. He asserts these patterns will be predictors of the same models for generations to come (Kerr & Bowen, 1988).

Family Projection Process

The family projection process describes the transmission of multi-generational problems from parents to their children. The premise of the process is parents pass along emotional problems to their children. This concept suggests that children inherit both challenges and strengths from caregivers. The method of projection is made up of three steps: (1) the parent places their focus on the child, with a continual fear something is wrong; (2) the parent reads the child's actions as a confirmation of this fear; (3) the caregiver begins to treat the child as though something is genuinely wrong with the child. Despite both parents participating equally in the family process, it affects the child in different ways since the mother's regular role is the primary caregiver. Bowen suggests this instinct, specifically maternal, begins as stress in the mother during the child's infancy gradually developing into significant symptoms into adolescence (Kerr & Bowen, 1988).

Multi-generational transmission process

The multigenerational transmission process explores the varying levels of differentiation, and the intensity of unresolved attachment to the past as a product of the multigenerational family history. This process is a continuation of the family projection process with a focus on the delivery of stress through multiple generations. Minor degrees of differentiation between children and parents arise from unconscious shaping of the development and conscious teaching

of children. Children acquire similar patterns of emotional processes like their parents but with slight differences. Bowen proposes how family ideals and the traditions of families can be either detrimental or supportive (Kerr & Bowen, 1988). Further, from this perspective, physical, emotional, and attachment processes can be transmitted through the generations. (Kerr & Bowen, 1988; MacKay, 2012; Nichols et al., 2004). Through this lens, it is possible to explore the childhood trauma of an adult, family friend, relative, or other caregiver and examine subsequent behaviors that can impact their mental health, as well as the future mental health of the child in the home (MacKay, 2012; Nichols et al., 2004).

Emotional Cutoff

Emotional Cutoff helps explain the varying patterns of dealing with past unresolved attachment through the action of cutting off from family and the long-term consequences and impact for doing so. Family members who are unable to decrease or regulate their unresolved emotional issues with family members or parents will cut-off emotional association by moving away geographically or seldom going home. These unresolved emotional issues generally center on unresolved attachment and differentiation of self. Bowen asserts this running away does not indicate emotional independence, but instead, this person tends to see the problems being with the parent rather than with self. The concept of emotional cutoff is also found to be reduced by individuals who choose to remain in physical contact with their members of their family but avoid delicate topics leaving problems unresolved and dormant. Furthermore, individuals run the risk of making brand new relationships suffer since patterns of emotional instability create tension even among “family substitutes” made up of work and social relationships (Kerr & Bowen, 1988).

Sibling Position

Sibling Position explains how an individual's position, within the order of sibling positioning, shape functional characteristics of personality. Bowen credits William Toman (1961), who is the pioneer behind organizing and applying profiles to siblings in each position held within the function of the family. Bowen incorporates these concepts into his approach that the eldest child leans toward a leadership role and the youngest child typically follows. The makeup of each one position is no indication of a place as better but is complimentary. Understanding the sibling position of the spouses can influence the decision to marry and determine the likelihood of divorce. For example, a manager who is the eldest child might work remarkably well with an assistant who happens to be the youngest child. Young children may prefer to be in command, but their management style will usually differ from the oldest child's style (Kerr & Bowen, 1988; Toman, 1961).

Societal emotional process

The idea of emotional process within society explains how periods of regressive and progressive moments in society determine low and high levels of differentiation functioning. The concept also describes how the family emotional system governs behavior within society. Bowen's initial clue concerning parallels that exist between families and the greater society stem from prior work with juvenile delinquents in families. This clue explains with the idea that despite lectures concerning responsibility and moments of severe punishments, parents eventually give way instead of maintaining consistent boundaries with children. Ultimately, the child will rebel, and the parental control becomes ineffectual. The gradual decay of emotional functioning, including the impact of lacking parental controls, and emotionally driven decisions unsupported by reasonable facts is societal regression. During regressive periods, society, mainly

when the presence of chronic anxiety is high, perpetuates counterproductive and mob-like behavior, resulting in long term societal consequences. Therefore, within the perspective of regression, people in society act to relieve the stress that is hijacking the moment rather than act on principle with attention to a long-term view (e.g., the imposition of harsh penalties and expressed disappointment to a juvenile in the hope of effecting a change in behavior). Societal progression, however, is said to be a process that occurs during periods where people identify more distinctly concerns that need solutions. During various periods of progress, advances in scientific evidence can flourish, and appropriate, verifiable facts support decision-making (Kerr & Bowen, 1988).

The BFS theory, views interactions within the family and with external influences as a catalyst or hindrance toward each family member's development, as well as the function of the family system overall (Kerr & Bowen, 1988; Nichols et al., 2004). Further, from this perspective, physical, emotional, and attachment processes can be transmitted across generations. (Kerr & Bowen, 1988; MacKay, 2012; Nichols et al., 2004). Through this framework, it is possible to explore how the childhood trauma of an adult, family friend, relative or other caregiver in the home may impact their adult mental health, as well as the future mental health of their children (MacKay, 2012; Nichols et al., 2004).

Indeed, families living in high-risk communities, and especially Black families and the children that reside within them, face disproportionately high levels of life stress (Cauce, Cruz, Corona, & Conger, 2011; Hodgkinson, Godoy, Beers, & Lewin, 2017; MacKay, 2012; Nichols et al., 2004), which, from a family systems approach, may negatively impact future individual and family functioning and physical and mental health status (Cowan, Cowan, & Schulz, 1996; MacKay, 2012; Nichols et al., 2004). Furthermore, family systems theories (Bavelas & Segal,

1993; Broderick, 1993; Kerr & Bowen, 1988) highlight the importance of within-family interactions to individual and family functioning, well-being, and the influence of trauma (MacKay, 2012; Nichols et al., 2004) which will underscore the present research inquiry surrounding ACEs and Black men.

BFS theory has been used as a theoretical framework for conceptualizing trauma, how ACEs is characterized in the literature, and developing interventions to affect family relationships (Caffaro, 2013; Fingerman & Bermann, 2000; Goodell & Hanson, 1999; MacKay, 2012). Most of the research conducted with BFS has utilized quantitative methods (Burri, Schweitzer, & O'brien, 2014; Drake, Murdock, Marszalek, & Barber, 2015; Xue et al., 2018); there are limited mixed-method and qualitative studies published in the literature (Spencer, 2015; Silverstein, Auerbach, & Levant, 2006). Most studies have used the BFS theory to specifically predict adult and family health outcomes and examine the impact of relationships (Bing, 2011; Conradi, Gerlsma, van Duijn, & Jonge, 2006; Foran, Whisman, & Beach, 2015; La Greca & Harrison, 2005; Priest, 2015; Sibley, Fischer, & Liu, 2005; Whisman & Baucom, 2012). Therefore, given high rates of stigma and unmet need within the Black male population to examine the contextual understandings surrounding depression the BFS theory will be utilized to frame the exploration of early familial processes, mediating health risk behaviors, and their associations with depression in Black men (Broderick, 1993).

Theoretical Assumptions

BFS theory posits that one fundamental way to creating a fulfilling relationship within an emotional system is to manage chronic anxiety. Chronic anxiety presents itself when an individual's emotional reaction to an imaginary threat in the familial relationship poses a detrimental impact as members absorb and adapt to stress. Due to adaptation efforts, mental,

physical, and social strain can begin to manifest. These symptoms can worsen and result in avoidant behavior, physical illness, and even depression. One other assumption is the idea that humans are driven innately by their togetherness and individuality. Bowen suggests, people naturally explore opportunities to feel a sense of belonging. This pursuit of a sense of belonging is the basis for the concept of reactivity where an individual that may not feel they belong will increase their dependency on a partner's affirmation (Kerr & Bowen, 1988).

Additionally, Bowen's Family systems theory assumes that emotional systems lack control and are practically unconscious. Within this view, Bowen suggests a difference exist between feelings and emotions. Feelings are said to be thoughtful responses that arise because of underlying emotional problems. Emotions and feelings are secondary to a person's objective view in the observation of relationship practices. Bowen proposes that an individual's family is an emotional unit. Therefore, if any change takes place within the familial emotional system, emotional reactions, specifically unconscious ones, influence the complete multigenerational unit. This perspective also assumes that issues that arise in one person can be a result of the anxiety consumed from another part of the familial system, not just from that person's nuclear family (Kerr & Bowen, 1988).

Political, Social, Emotional Determinants of Health and BFS Theory

Researchers agree (Mouzon, 2014; Watkins, 2012; Watkins & Neighbors, 2007; Watkins & Jefferson, 2013) further contributions to the health field that highlight the ways in which certain determinants of health impact quality of life are needed to develop culturally sensitive health interventions tailored to meet the needs of Black men (Mouzon, 2014; Watkins, 2012; Watkins & Neighbors, 2007; Watkins & Jefferson, 2013). Thus, exploring health impacting determinants in relation to the theoretical framework selected for this study highlights the

significance of this research inquiry and its efforts to increase understandings of factors influencing wellbeing or reinforcing illness (Matthews et al., 2013; Watkins, Green, Rivers, & Rowell, 2006; Watkins, Hawkins, & Mitchell, 2015; Watkins, Walker, & Griffith, 2010; Watkins & Griffith, 2013).

Due to early adversity, Black men may be at higher risk for negative health outcomes over their lifetime (Blumberg et al., 2016; Dallas & Burton, 2004; Miller & Bennett, 2011; Ports et al., 2017; Watkins & Griffith, 2013). Though researchers agree, to capture a precise picture of vulnerabilities and effectively address negative health outcomes and health disparities among Black men, context is a significant factor. Indeed, to adequately respond to unique vulnerabilities Black men face, researchers suggest, public health educators aim to mitigate the myths of behavioral explanations founded on racial stereotypes, territorial stigmatization, and race-based biology. Furthermore, researchers recommend that efforts to address health disparities must consider the context of material resource scarcity caused by low socioeconomic status, toxic stress brought on by experiences of racial discrimination, or alternate types of place-based risk (Chowkwanyun & Reed, 2020).

Health issues that persist on an individual level and even familial level, when intentionally explored through an explanatory context, can offer helpful understandings in addressing health disparities. One explanatory context, researchers agree, are the political determinants of health (PDOH) (Dawes, 2020).

Political Determinants of Health

PDOH involve the structural organizing of relationships, the distribution of resources, and administration of power, operating concurrently in ways that mutually influence or reinforce one another to structure opportunities that either advance health equity or intensify health inequities (Dawes, 2020). The PDOH model emphasizes three significant aspects of political determinants, which include government, voting, and policy (Dawes, 2020).

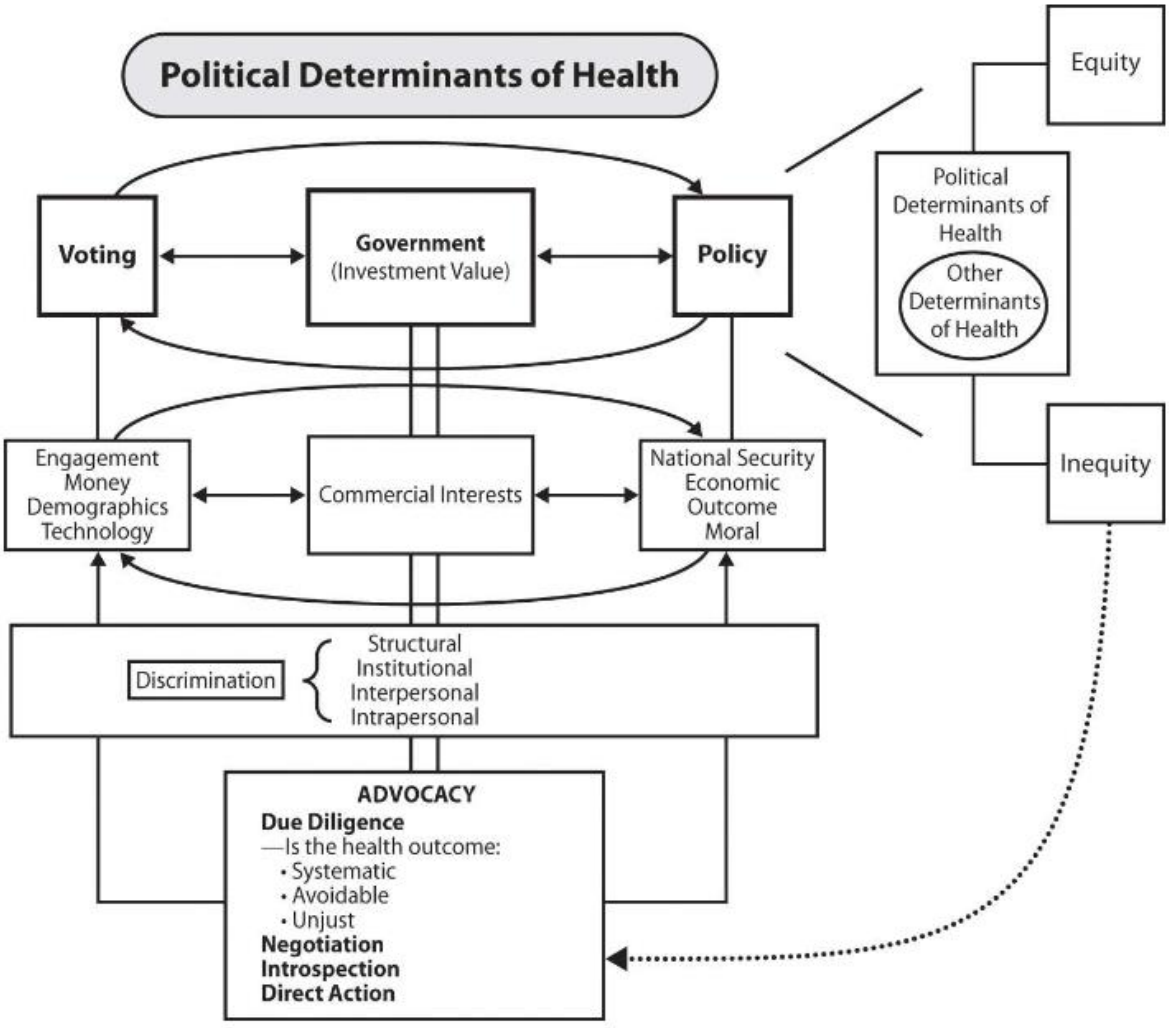

Figure 2.1 The Political Determinants of Health model. Adapted from "The Political Determinants of Health model," by Dawes, 2020, *The Political Determinants of Health, 2, p. 1014-1724.*

The PDOH lens assists in the examination of processes, structures and outputs that permit inequities to structurally flourish or develop (Dawes, 2020). Thus, the PDOH provide a multidisciplinary basis to address a multitude of multifaceted factors influencing and affecting the overall quality of life continuum and frame understandings around premature death for some and the extension of life for others (Dawes, 2020).

Social Determinants of Health

Not surprising, the social conditions impacted by structural forces are associated with social determinants of health (SDOH).

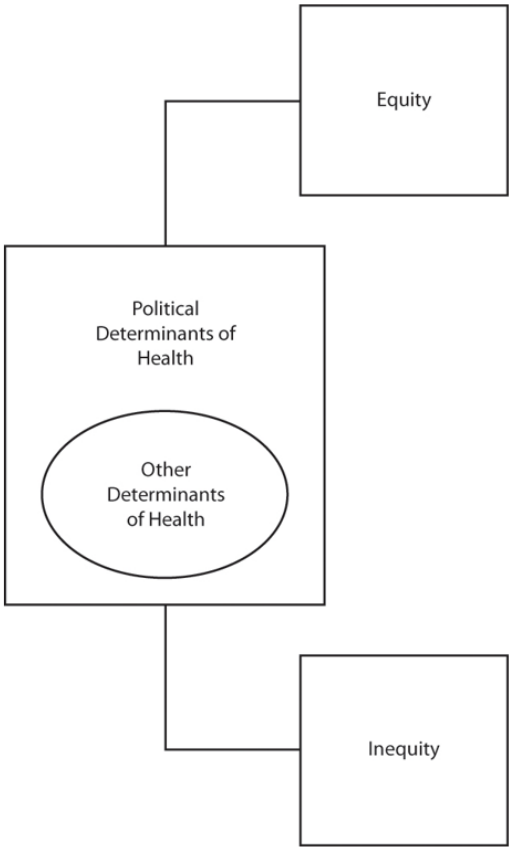

Figure 2.2 The Political Determinants of Health model with attention to other determinants. Adapted from "The Political Determinants of Health model," by Dawes, 2020, *The Political Determinants of Health, 2, p. 1014-1724.*

SDOH are defined “as conditions in the environments that individuals are born into, where they live, play, worship, work, and age that affect a wide range of health, functioning, and quality-of-life risk and outcomes” according to Healthy People 2020 (HHS ODPHP, 2011). SDOH can help explain how various segments of the population adversely experience more significant obstacles to services based on sociodemographic factors or characteristics and as a result experience discrimination and exclusion (HHS ODPHP, 2011).

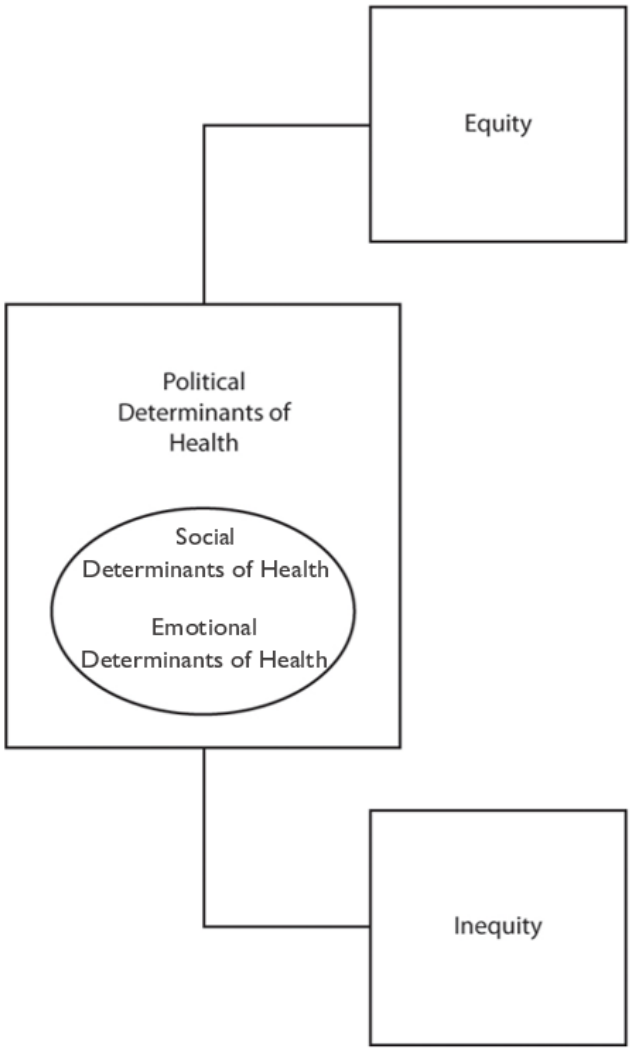

Figure 2.3 The Political Determinants of Health model and naming other determinants. Adapted from “The Political Determinants of Health model,” by Dawes, 2020, *The Political Determinants of Health, 2, p. 1014-1724.*

Indeed, given the emergent and dynamic nature of research and practice on social and emotional development, Christina D. Bethell, PhD, director of the Child and Adolescent Health Measurement Initiative at Johns Hopkins University, questioned where emotional determinants of health (EDOH) fit in (Plough, 2017).

Emotional Determinants of Health

Emotional determinants of health (EDOH) are impacted chiefly by political determinants of health or the wider set of forces and structural processes shaping the conditions of daily life.

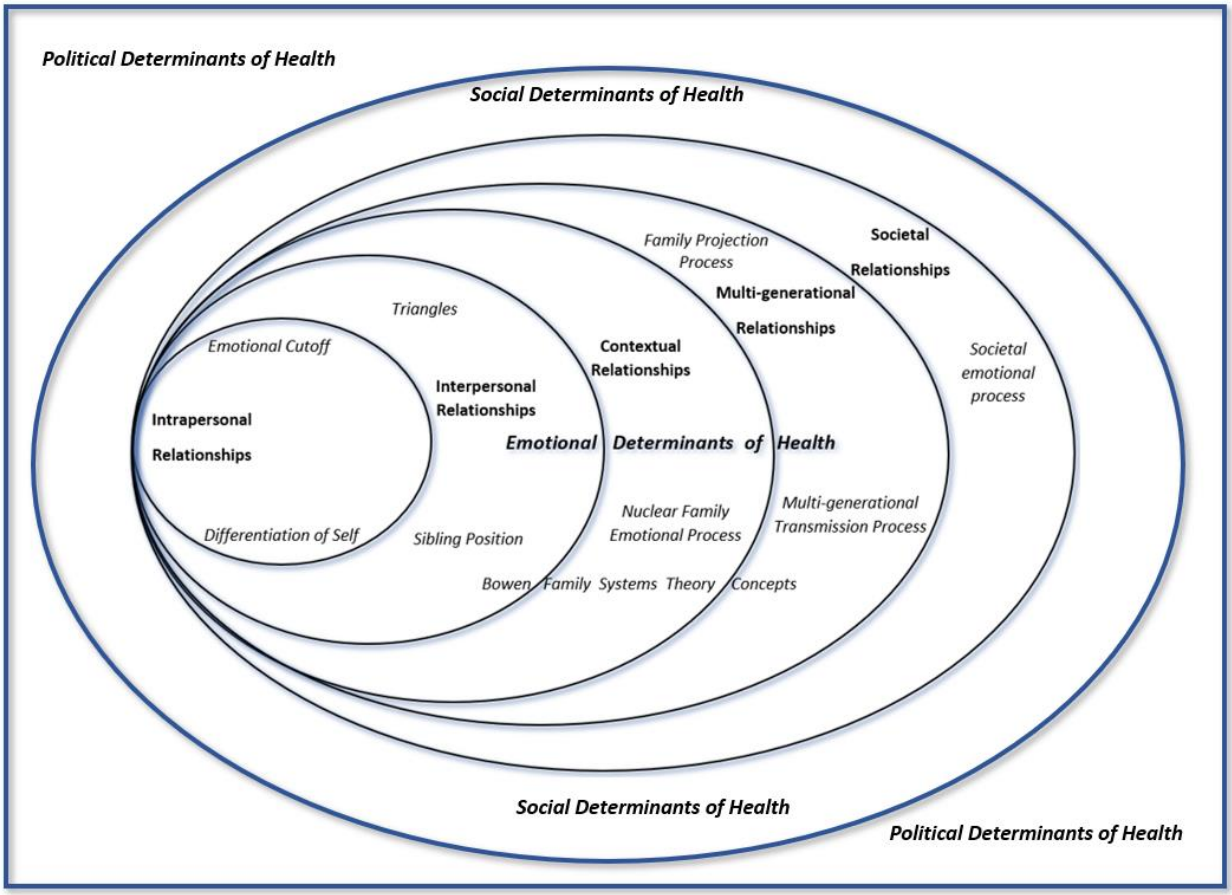

Figure 2.4 The Emotional Determinants of Health organizing structure of relational influence and BFS theoretical concepts. Adapted from "Bowen's pioneering eight interlocking concepts of family systems theory," by Kerr and Bowen, 1988, *Family evaluation*, 10, p. 282-339.

EDOH are inextricably linked to social determinants of health, existing as mutually emotional health reinforcing or influencing, interrelated, non-familial or familial relationships across varying multi-dimensional levels of influence that can impact emotional health (Plough, 2017).

The EDOH organizing structure, for this study, is viewable through the lens of the Bowen Family Systems Theory, consisting of five key areas or multi-dimensional levels of influence that may positively or negatively affect emotional health: (1) intrapersonal relationship, (2) interpersonal relationships, (3) contextual relationships, (4) multi-generational relationships, (5) societal relationships. Thus, EDOH may help frame how essential family functions, such as nurturance, protection, stability, and cohesion can look differently among families and impact mental health. Kerr and Bowen (1988) theory-based framework provides for understanding and exploring EDOH within a familial context with special attention to BFS theoretical concepts.

Thus, (1) intrapersonal relationship encompass the BFS concepts of differentiation of self and emotional cutoff; (2) interpersonal relationships encompass triangles and sibling position; (3) contextual relationships encompasses the nuclear family emotional process, (4) multi-generational relationships encompasses family projection and the multigenerational transmission process; and (5) societal relationships encompasses the societal emotional process. See Table 2.1 to view the EDOH coalesced with the BFS theoretical familial concepts and characteristics.

Table 2.1

The Levels of Emotional Determinants of Health and the BFS Theoretical Concepts

***EDOH Levels of Influence**	**Intrapersonal Relationship**	**Interpersonal Relationships**	**Contextual Relationships**	**Multi-generational Relationships**	**Societal Relationships**
BFS Theoretical Concepts	*Differentiation of Self* *Emotional Cutoff*	*Triangles* *Sibling Position*	*Nuclear Family Emotional Process*	*Family Projection* *Multi-generational Transmission Process*	*Societal Emotional Process*
Attributes	Self-directed choices Emotional connectedness to self Personal emotional comfort Reactivity	Couple conflict Spousal Illness Sibling positions	Family Traditions Family Harmony Emotional distance Parenting Status (biological, legal guardian, step)	Family System Multi-contextual lens Emotional transmission process Projection of a problems Selection of future mates Adult outcomes	Societal regression Societal progression

Note: * EDOH are impacted chiefly by political determinants of health or the wider set of forces and structural processes shaping the conditions of daily life.

Intrapersonal Relationship. Intrapersonal relationship includes the individual relationship and its contribution to the familial emotional system. This dimension examines the impact of self-directed choices, personal emotional comfort, emotional connectedness, and reactivity. Self-directed choice is the capacity of the individual to make emotionally self-directed decisions based on the concept of differentiation. Personal emotional comfort describes the emotional energy invested in the familial relationship and how it originates out of the personal

connection to oneself to maintain emotional well-being. Emotional connectedness places emphasis on the process of making self-directed emotional choices and how maintaining emotional connectedness with oneself is crucial to the intensity, whether positive or negative, of the significant relationship with others. Reactivity denotes an individual's lack of capacity to think through their emotional responses to relationship dilemmas, reacting anxiously to perceived emotional demands. This relationship includes the various personal features that shape an individual's own abilities and experiences within the family emotional system (Kerr & Bowen, 1988).

Interpersonal Relationships. Interpersonal relationships include the dynamic of social relationships within the family system. This dimension explores couple conflict, spousal illness, and sibling position. Couple conflict is a cyclic pattern where anxiety underscores a relationship's moments of closeness, distance due to friction, and resuming intense closeness. This pattern is an attempt of each persona to become more whole through the other. Spousal illness is a process where a spouse's attempt to define him or herself according to the reactions of the other often resulting in a controlling spouse, feelings of under functioning in the relationship, and becoming vulnerable to symptoms of depression, substance abuse and chronic pain. Sibling position refers to the role that individuals tend to take in relationships. This positioning may appear as the eldest child taking on a leadership role in the relationship with younger siblings being dependent and the decision making falling to older siblings or vice versa with a functional eldest (Kerr & Bowen, 1988).

Contextual Relationships. Included in this dimension are a host of factors that help shape or define the family and its influence on the overall system. This dimension includes family traditions, family harmony, emotional distance, and parenting status. Bowen proposes that

family ideals and the traditions of families may be either detrimental or supportive. Family tradition may include beliefs about child-rearing, or the value of education or religion. Family harmony consists of the adjustments each family member makes to the reactions of the other to preserve relational harmony. Emotional distance is the individual's voluntary choice of distancing from family members to reduce the anxiety and tension of the familial relationship, even risking isolation. Regarding parenting status, which includes step, biological, or legal guardians, Bowen maintains that emotional patterns operate in intact families, single-parent, stepparent, and all other nuclear family systems. Family stress reactions are replicas of past generations and will continue to repeat in future generations (Kerr & Bowen, 1988).

Multi-generational Relationships. Multi-generational relationships offer context concerning the transmission of familial emotional processes through generations. This dimension consists of the family system, the multi-contextual lens, the transmission process, selections of future mates, projections of problems onto one or more children and adult outcomes. The family system pertains to patterns relating in the past and how they continue in the present family system. The multi-contextual lens deals with the significance of gender, race, ethnicity, and class on a family's progression through life cycles and overall child development and later adult physical and mental health outcomes. This lens considers socially defined gender roles, feminist positions on the framework, and looks at patterns in relationships. Transmission process accounts for the various levels of differentiation and the intensity of unresolved attachment to the past as a product of multi-generation family history. This process highlights the delivery of stress and trauma through multiple generations with attention to the unconscious shaping of child development and teaching of emotional methods to children. Selection of future mates is the predictability of people selecting mates in later adulthood with levels of differentiation of self

that match their own due to the multi-generational family influences. The projection of a problem onto one or more children describes how children develop emotional symptoms when they are caught up in the previous generation's anxiety about relationships Adult outcomes are the degree of differentiation brought on from multi-generational influences affecting longevity, marital stability, reproduction, physical health, mental health, educational accomplishments, and employment success. The roots lie within severe human problems in the family unit as well as high levels of human adaptation that are generations deep, affecting later adult physical and mental health outcomes (Kerr & Bowen, 1988).

Societal Relationships. Societal relationships offer an enhanced view of the impact of familial emotional processes on the greater society. This dimension includes the societal emotional process, societal regression, and societal progression. Societal emotional process explains how periods of regressive and progressive moments in society determine low and high levels of differentiation functioning. The concept also describes how the family emotional system governs behavior within society. Bowen's initial clue concerning parallels that exist between families and the greater society stem from prior work with juvenile delinquents in families. This clue explains that despite lectures relating to responsibility and moments of severe punishments, parents eventually give way instead of maintaining consistent boundaries with children. Ultimately, the child will rebel, and the parental control becomes ineffectual. Societal regression refers to the gradual decay of emotional functioning, including the impact of lacking parental controls, and emotionally driven decisions unsupported by reasonable facts is societal regression. During regressive periods, society, mainly when the presence of chronic anxiety is high, perpetuates counterproductive and mob-like behavior, resulting in long term societal consequences. Therefore, within the perspective of regression, people in society act to relieve the

stress that is hijacking the moment rather than act on principle with attention to a long-term view (e.g., the imposition of harsh penalties and expressed disappointment to a juvenile in the hope of effecting a change in behavior). Societal progression, however, is said to be a process that occurs during periods where people identify more distinct concerns that need solutions. During various periods of progress, advances in scientific evidence can flourish, and appropriate, verifiable facts support decision-making (Kerr & Bowen, 1988).

Theoretical Implications and Limitations

The BFS theory views interactions within the family and with external influences as a catalyst or hindrance toward each family member's development, as well as the function of the family overall (Kerr & Bowen, 1988; Nichols et al., 2004). Further, from this perspective, physical, emotional, and attachment processes can be transmitted through the generations (Kerr & Bowen, 1988; MacKay, 2012; Nichols et al., 2004). Through this lens, it is possible to explore the childhood trauma of an adult, family friend, relative, or other caregiver and examine subsequent behaviors that can impact their mental health, as well as the future mental health of the child in the home (MacKay, 2012; Nichols et al., 2004).

Indeed, families living in high-risk communities, and especially Black families and the children that reside within them, face disproportionately high levels of life stress due to structural racism and SDOH (Cauce, Cruz, Corona, & Conger, 2011; Hodgkinson, Godoy, Beers, & Lewin, 2017; MacKay, 2012; Nichols et al., 2004). From a family systems approach, high stress levels may negatively impact future individual and family functioning and physical and mental health statuses (Cowan, Cowan, & Schulz, 1996; MacKay, 2012; Nichols et al., 2004). Furthermore, family systems theories (Bavelas & Segal, 1993; Broderick, 1993; Kerr & Bowen, 1988) highlight the importance of within-family interactions to individual and family

functioning, well-being, and the influence of trauma (MacKay, 2012; Nichols et al., 2004) which will underscore the present research inquiry surrounding ACEs and Black men.

This study, therefore, will look at sociodemographic factors and examine how adverse childhood experiences, through multi-generational familial emotional relationship lens, influence adult physical and mental health outcomes. Additionally, this theory has the potential to inspire men to seek better understandings around early adverse experiences, mediating health risk behaviors, chronic medical conditions, and their own mental health.

Theoretical Limitations

Each level of EDOH is separated into five relationship categories, though some components may be suitable within more than one group. It is impossible to cover every facet that affects child development and later adult physical and mental health outcomes, so the factors listed are limited by the concepts of the theorists' conceptualization. For this research project, Bowen Family System theory will be utilized as the designated family system theory. See Table 2.2 to view the levels of EDOH, the BFS theoretical familial context, and the connections to be examined with respect to ACEs for the current study. The levels, in context, underscore to what extent, ACEs, chronic health conditions, health risk behaviors and sociodemographic factors may impact or be impacted by familial relationships across varying categories. See Table 2.2 to view the levels of EDOH and the BFS theoretical familial context, examining the interplay of factors relevant to this study: (1) direct and environmental ACEs; (2) depression; (3) sociodemographic factors; (4) chronic medical conditions; and (5) health risk behaviors.

Table 2.2

Levels of EDOH and the BFS Theoretical Familial Concepts: Examining the Interplay of Factors

***EDOH Levels of Influence**	**Intrapersonal Relationship**	**Interpersonal Relationships**	**Contextual Relationships**	**Multi-generational Relationships**	**Societal Relationships**
BFS Theoretical Concepts	*Differentiation of Self* *Emotional Cutoff*	*Triangles* *Sibling Position*	*Nuclear Family Emotional Process*	*Family Projection* *Multi-generational Transmission Process*	*Societal Emotional Process*
Attributes	Self-directed choices (*e.g., health risk behaviors*) Emotional connectedness to self (*e.g., ACEs-direct and environmental*) Personal emotional comfort (*e.g., health risk behaviors*) Reactivity (*e.g., ACEs-direct and environmental*)	Couple conflict (*e.g., ACEs-direct and environmental*) Spousal Illness (*e.g., ACEs-direct and environmental and chronic medical conditions*) Sibling positions (*e.g., ACEs-direct and environmental*)	Family Traditions (*e.g., ACEs-direct and environmental*) Family Harmony (*e.g., ACEs-direct and environmental*) Emotional distance (*e.g., ACEs-direct and environmental*) Biological, legal guardian, or step parenting status (*e.g., ACEs-direct and environmental*)	Family System (*e.g., ACEs-direct and environmental*) Multi-contextual lens (*e.g., sociodemographic factors*) Emotional transmission process (*e.g., ACEs-direct and environmental*) Projection of a problem onto one or more children (*e.g., ACEs-direct and environmental*) Selection of future mates (*e.g., ACEs-direct and environmental*) Adult outcomes (*e.g., presence of chronic medical condition; health risk behaviors; depression*)	Societal regression (*e.g., ACEs-direct and environmental*) Societal progression (*e.g., ACEs-direct and environmental*)

Note: * EDOH are impacted chiefly by political determinants of health or the wider set of forces and structural processes shaping the conditions of daily life.

Barriers to Addressing Mental Health

Poor mental health outcomes pose severe implications for a state's public health and health care system (Holman et al., 2016). Good mental health is associated with better health outcomes, yet relatively little research has explored ACEs and health risk related factors that may influence the extent of mental well-being among Black men (Remigio-Baker et al., 2014; Ports et al., 2017). Common barriers to addressing mental health include sociodemographic factors such as age, employment, income, health insurance coverage, and often race related barriers to services and information (Holden, McGregor, Blanks, & Mahaffey, 2012; Remigio-Baker, Hayes, & Reyes-Salvail, 2014; Ward, & Mengesha, 2013). When Black men are uninformed about supports for mental health, they are less likely to be prepared and willing to seek help.

Implications for Mental Health

Despite the potential benefits mental health promotion efforts can provide for Black men (Hergenrather, Geishecker, Clark, & Rhodes, 2013; Watkins & Jefferson 2013; Ward, & Brown, 2015), little research has examined the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions, and health behavioral risks (Chapman et al., 2004; Metzler et al., 2017; Watkins 2012; Watkins & Jefferson 2013; Ward, & Brown, 2015; Williams 2003). Healthy People 2020 acknowledges that social determinants impact the mental health and well-being of individuals over time (HHS ODPHP, 2011). Black men contend with multiple mental health challenges that upon examination may be associated with early adversity (Watkins et al., 2010). With various links between early adversity and poor adult health outcomes (De et al., 2013; Felitti et al., 1998; Finkelhor et al., 2013), it is plausible to surmise that the impact of

ACEs on underrepresented groups, may highlight associations between mental health challenges, physical health inequities, and health risk behaviors. Therefore, the purpose of this study and research inquiry is to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

CHAPTER 3

METHODS

The purpose of this study and research inquiry was to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data. The following chapter describes the study population, survey instrument, research methods, and analyses that were used to address the study purpose.

Institutional Review Board Approval

The BRFSS is listed by the University of Alabama Human Research Protection Program as one of the approved public datasets for secondary data analysis. Therefore, this study did not require submission to the IRB (see Appendix A).

Study Design

The current study utilized a cross-sectional secondary data analysis. Secondary data refer to data previously collected by someone else and available for immediate use (McKenzie, Neiger, & Thackeray, 2012). The advantages of using secondary data include (1) data is already in existence, making collection time minimal; (2) data are inexpensive or are no cost to access (McKenzie, Neiger, & Thackeray, 2012). Studies, cross-sectional in nature, are observational studies that examine data from a population at a certain point in time without influencing the environment (Barratt & Kirwan, 2009). Some advantages to utilizing this type of study design are it offers data on the entire population under study, it is relatively inexpensive,

and the researcher can compare distinct populations at a defined time (Barratt & Kirwan, 2009). However, cause and effect relationships are not described through cross-sectional studies; therefore, causal associations cannot be made. In addition, participants may find it challenging to recall past events, which may cause biased results.

Findings from quantitative descriptive studies are needed to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks.

Purpose and Scope

The BRFSS collects data on behaviors of significant health risk, preventive health practice approaches, and health care access primarily related to chronic disease and injury among the civilian non-institutionalized household population in the United States (CDC & BRFSS, 2013b). Data derived from the questionnaire have been used to help programmatic planning, monitoring, and evaluation efforts of health services and health education programs for families (CDC & BRFSS, 2013b).

The BRFSS Sample Description

The adult respondent file contains 18,954 interviews and included data from the 2012 North Carolina (n = 11,898) and Tennessee (n = 7,056) Behavioral Risk Factor Surveillance System (BRFSS). Data were analyzed from 3,084 Black men participating in the two states with complete records for the variables included in the main analyses. The year 2012 exists as the only timeframe where the ACE module was included in only two participating states (North Carolina and Tennessee) BRFSS survey that had the highest sample of Black men; North

Carolina (n= 2116) and Tennessee (n= 968). The cooperation rates and response rates for BRFSS are calculated using standards set by the American Association of Public Opinion Research (AAPOR) (Definitions, 2016). The cooperation rate, defined as the number of completed interviews divided by the number of eligible respondents who were successfully reached by an interviewer, for each of the two states was 66.8% (North Carolina) and 70.7% (Tennessee). The response rate, which is defined as the number of respondents who completed the survey as a proportion of all eligible and likely eligible persons, for each of the two states was 40.4% (North Carolina) and 45.4% (Tennessee). This study was exempt from human subjects' review as the data were obtained from public-use surveillance datasets.

The BRFSS Sampling Methods

The respondent survey population for the 2012 BRFSS included all non-institutionalized adults ages 18-65 years, and who resided in all 50 United States and the District of Columbia (CDC & BRFSS, 2013b). The exclusion criteria for this study consisted of individuals under the age of 18 and over the age of 65. Individuals under the age of 18 were excused because the 2012 BRFSS did not include data on individuals under the age of 18. Individuals over the age of 65 were excused because the 2012 BRFSS did not include data on individuals over the age of 65. Adults also excluded from the survey population were those in institutions, such as prisons, homes for delinquent juveniles, homes for the intellectually disabled, long-term psychiatric hospitals, and those living on military bases. These adults were excluded because they may lessen the generalizability of the study findings (CDC & BRFSS, 2013b).

While conducting the US BRFSS, in the form of a telephone survey, a sample report is a single phone number among the list of the telephone records for the purpose of a call. Sample records must be legitimate probability samples of each household, with telephones, to meet the

standards set forth by the US BRFSS. According to the BRFSS overview, all states participating in the 2012 system met this standard. Among the projects participating, fifty-one of them utilized a disproportionate stratified sample (DSS) design and Guam, and Puerto Rico employed a simple random sample study procedure.

DDS design in the 2012 BRFSS, helps situate landline telephone numbers in the process of being divided among two groups, or strata, to be sampled individually. Based on whether the strata were high or medium density helped determine which landline numbers belong primarily to homes. As a result, numbers listed, that were household numbers, were examined by block, or by each set of 100 phone numbers with the corresponding prefix, area code, all possible combinations, and the first two digits of the suffix. Then, numbers that developed from these blocks with one or more home telephone numbers in their respective high or medium-density grouping were included. Then, the two groups are tested to achieve a probability sample of all homes with phones. Cell phone sampling is available, and its use is typically at random during the data collection process. Each 10-digit phone number is arbitrary (CDC & BRFSS, 2013b). Furthermore, the typical target population for cellphone samples in 2012 were made up of individuals living in homes who owned a working cellphone, were 18 and older, and accounted for more than 90 percent of their calls on cell phones. In the sample design, each state begins with a single stratum, sampling disproportionately. This sampling included 48 states. Data included in analysis from any state may be collected directly by the state's health department or through a contractor.

By 2012, 11 state health departments collected data in-house; nearly 42 health departments contracted data collection to an institute of higher education's research center. Additionally, in 2012, the CDC’s BRFSS' Branch contributed samples acquired from Marketing

Systems Group, Inc. (MSG) to each of the states and territories (CDC & BRFSS, 2013b). For the purpose of this study, the current sample met the following criteria: (1) adult men who were 18 years of age or older; (2) self-identified as Black; (3) reported their marital status, educational attainment, employment status, health insurance coverage, household income; (4) childhood exposure to ACEs; (5) chronic medical condition status; (6) mental health status; and (7) involvement in health risk behaviors.

The BRFSS Core Questionnaire and ACE Optional Module Questionnaire

The BRFSS questionnaire consists of two parts: (1) the core section which contains a set of basic health and demographic items, preventive health practices linked to chronic diseases and injuries that affect the adult population and (2) the optional module section which contains questions on behaviors of significant health risks, some preventable infectious diseases and questions related to traumatic experiences that occurred before the age of 18. The data used in this analysis reflect changes in weighting methodology (raking) and include both landline and cell phone respondents for the two states (North Carolina and Tennessee) that participated in the 2012 BRFSS and the optional ACE module. The 2012 BRFSS optional ACE module consist of 11 questions, which asked survey participants about events that happened before they were 18 years old. Further, the optional ACE module included questions about adverse, stressful, and/or traumatic events experienced as a child (CDC & BRFSS, 2013c).

The BRFSS questionnaire is broken down into 18 core sections with 27 optional modules. In the current study, the questionnaire consists of 25-items of a mixture of Likert Type, yes/no and multiple-choice questions organized from both the 2012 BRFSS survey core sections and optional module. For this study, the questionnaire items were selected from 6 of the core sections and 1 optional module. These include the Healthy Days—Health Related Quality of Life

Core (e.g., section 2); Health Care Access (e.g., section 3); Chronic Health Conditions Core (e.g., section 5); Demographics Core (e.g., section 7); Tobacco Use Core (e.g., section 9); Alcohol Consumption Core (e.g., section 10); HIV/AIDS Core (e.g., section 18); and Adverse Childhood Experiences Optional Module (e.g., module 22). The Healthy Days—Health Related Quality of Life section of the questionnaire encompassed capturing data, of one household member who was at least 18 years or older, on whether within a 30-day period the individual's mental health was not good. The Health Care Access section of the questionnaire encompassed capturing information, of one household member who was at least 18 years or older, on whether the individual has any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service. The Chronic Health Conditions section of the questionnaire encompassed capturing data, of one household member who was at least 18 years or older, on whether a doctor, nurse, or other health professional ever told the individual that they had heart disease, diabetes, stroke, or a diagnosis of depression. The Demographics section of the questionnaire encompassed capturing information, of one household member who was at least 18 years or older, pertaining to basic sociodemographics, specifically related to age, race, marital status, education attainment, employment status, health insurance coverage, and household income. The Tobacco Use section of the questionnaire encompassed capturing data, of one household member who was at least 18 years or older, on the individual's current smoking status. The Alcohol Consumption section of the questionnaire encompassed capturing data, of one household member who was at least 18 years or older, on the individual's binge drinking behaviors. The HIV/AIDS section of the questionnaire encompassed capturing information, of one household member who was at least 18 years or older, on the individual's high-risk sexual behaviors. The Adverse Childhood

Experiences optional module of the questionnaire encompassed capturing data, of one household member who was at least 18 years or older, on an individual's childhood exposure to adverse, stressful, and/or traumatic experiences. The following, Table 3.1, adapted from 2012 Behavioral Risk Factor Surveillance System and Centers for Disease Control and Prevention Overview Book, shows the BRFSS Questionnaire Core Sections and Optional Modules Characteristics.

Table 3.1

BRFSS Questionnaire Core Sections and Optional Modules Characteristics

Core Sections	**Characteristics**
1	health status
2	healthy days—health related quality of life
3	health care access
4	exercise
5	chronic health conditions
6	oral health
7	demographics
8	disability
9	tobacco use
10	alcohol consumption
11	immunization
12	falls
13	seatbelt use
14	drinking and driving
15	breast and cervical cancer screening
16	prostate cancer screening
17	colorectal cancer screening
18	HIV/AIDS
Optional Modules	**Characteristics**
1	pre-diabetes
2	diabetes
3	healthy days (symptoms)
4	visual impairment and access to eye care
5	sugar sweetened beverages and menu labeling
6	excess sun exposure
7	inadequate sleep
8	fruits and vegetables
9	adult asthma history
10	high risk/health care worker
11	shingles (Zostavax or ZOS)
12	tetanus diphtheria (adults)
13	adult human papilloma virus (HPV)
14	prostate cancer screening decision making
15	cancer survivorship
16	reactions to race
17	mental illness and stigma

18	social context
19	general preparedness
20	veterans' health
21	chronic obstructive pulmonary disease (COPD)
22	adverse childhood experiences
23	random child selection
24	childhood asthma prevalence
25	childhood immunization
26	HIV/AIDS
27	emotional support and life satisfaction

BRFSS Data Collection

The United States' Behavioral Risk Factor Surveillance System (BRFSS) data was used in this study. The BRFSS survey is a project conducted between the U.S. states and territories and the Centers for Disease Control and Prevention (CDC). Since its enactment in 1984, the BRFSS survey collects data on behaviors of significant health risk, preventive health practice approaches, and health care access primarily related to chronic disease and injury in the U.S. population. Initially, 15 states collected data, whereby interviewers participated monthly, by phone (CDC & BRFSS, 2013b).

Eventually, the overall number of states participating in the BRFSS survey increased; by 2001, 50 states, along with Puerto Rico, the U.S Virgin Islands, the District of Columbia, and Guam, were participating in the BRFSS. Since 2011, BRFSS utilizes both cellular and landline telephone-based surveys. By using the BRFSS cellular survey data are collected from an adult who contributes by using a mobile telephone. In using the landline telephone survey method, data are obtained from a selected adult, at random, within a household (CDC & BRFSS, 2013b). Also, state health departments, adhering to guidelines provided by the CDC, manage the BRFSS field operations. Health departments involved in administering the BRFSS play critical roles in creating the survey tool, conducting interviews in-house, or employing the use of contractors to assist with data collection.

Module and core questions, a part of data collection, received support using the Computer Assisted Telephone Interviewing (CATI) system software and allowed for a more streamlined approach to offering state-specific questions to participants. Based on guidelines put forth by the CDC, each contractor or state health department personnel lead interviews. The core questions of the BRFSS survey lasted around 18 minutes. Typical module interview time varied by the number of questions asked and generally add 10 minutes to the questionnaire. It is not uncommon for interview retention to remain high in states where personnel conduct the questionnaire in house. Furthermore, seven areas covered offer sufficiently trained staff support to facilitate coordination of BRFSS data collection. The essential areas are (1) overview of BRFSS; (2) role delineation for interview/staff; (3) the BRFSS survey; (4) sampling methodology; (5) dispositions and codes that determine call results; (6) BRFSS follow-up; (7) sessions for practice. During the 2012 BRFSS, telephone interviewing took place each calendar month, and calls were initiated seven days out of the weekday and night (CDC & BRFSS, 2013b).

Data gathered during the administration of the 2012 BRFSS was transmitted to the Office of Surveillance, Epidemiology, and Laboratory Services, Behavioral Risk Factor Surveillance Branch at the CDC, for editing, processing, weighting, and analysis (CDC & BRFSS, 2013b).

Then, each participating health department receives an edited and weighted data file provided per year during data collection along with summary reports of state-specific data prepared by the CDC. These data are used by health departments for a variety of purposes, which include targeting services, identifying demographic variations in health-related behaviors, proposing legislation for health initiatives and policy agendas, measuring progress toward state and national health objectives, and addressing emergent and critical health issues (CDC &

BRFSS, 2013b). Additionally, state engagement in the BRFSS assists with programmatic planning, monitoring, and evaluation efforts of health services and health education programs for families (CDC & BRFSS, 2013b).

Data Cleaning

The 2012 BRFSS survey data file was used to create a master dataset for the current study using Statistical Packages for Social Sciences version 25 (SPSS Statistics 25). Selected variables of interest were extracted and placed in a separate data file. To accomplish this, a record identifier was selected from within the dataset—the Federal Information Processing Standard (FPIS) state codes used to identify North Carolina (37) and Tennessee (47). All other states, except for North Carolina and Tennessee were removed from the dataset to create the final master dataset from which variables of interest were labeled and recoded.

Variables of Interest

Independent Variables

Direct ACEs items. A direct ACE refers to early exposure, before age 18, of physical, verbal, and sexual abuse.

Environmental ACEs items. An environmental ACE refers to exposure, before age 18, to household adults living with a mental illness, living with a substance use disorder, living with an alcohol addiction, experiencing divorce, engaging in domestic violence, and undergoing the experience of household member incarceration.

Covariates. The covariates examined for this study included age, self-reported race, marital status, educational attainment, employment status, health insurance coverage, annual income, and presence of chronic medical condition.

Mediating Variables. The mediating variables for this study include the health risk behaviors, smoking, binge drinking and sexual risk behaviors.

Dependent variable

Depression items. Current depression in this study was measured based on self-report manifestations of depressive symptoms that represented either no reports of significant depressive symptoms to a range of possible manifestations of depressive symptoms from mild, to moderate, moderately severe and severe (Kroenke et al., 2009).

Lifetime diagnosis of depression was measured based on self-report confirmation of having been diagnosed as having a depressive disorder, including depression, major depression, dysthymia, or minor depression. A lifetime diagnosis of depression is a major cause of mortality and morbidity in the U.S. and are associated with decreased social functioning and health-related quality of life (Creed et al., 2002; Gaynes, Burns, Tweed, & Erickson, 2002; Hu, 2007; Saarni, 2007; Sobocki et al., 2007), as well as with increased disability (Dunlop, Manheim, Song, Lyons, & Chang, 2005; Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007; Lenze et al., 2001).

In addition, depressive symptoms, are associated with increased prevalence of chronic medical conditions and often exacerbate or precipitate these ailments (Chapman, Perry, & Strine, 2005). Fortunately, depression can often be effectively treated with psychotherapies and medication (Young, Klap, Sherbourne, & Wells, 2001). However, Black men are often less likely to seek care, and those who do often do not receive suitable care (Addis, 2008; Holden et al., 2012; Mahalik, Good, & Englar-Carlson, 2003; Plowden, Adams, & Wiley, 2016; Watkins et al., 2017; Williams et al., 2007). See Table 3.2 to view the variables of interest for current study.

Table 3.2

Variables of Interest for Current Study

Independent Variables		**Questions**
	Direct ACE	Before age 18, did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. (**physical abuse**)
	Direct ACE	Before age 18, did a parent or adult in your home ever swear at you, insult you, or put you down? (**verbal abuse**)
	Direct ACE	Before age 18, did anyone at least 5 years older than you or an adult, ever touch you sexually, make you touch them sexually, or force you to have sex? (**sexual abuse**)
	Environmental ACE	Did you live with anyone who was depressed, mentally ill, or suicidal? (**household member mental illness**)
	Environmental ACE	Did you live with anyone who was a problem drinker or alcoholic? (**household member alcohol misuse**)
	Environmental ACE	Did you live with anyone who used illegal street drugs or who abused prescription medications? (**household member substance misuse**)
	Environmental ACE	Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility? (**household member incarceration**)
	Environmental ACE	Were your parents separated or divorced? (**divorce**)
	Environmental ACE	Did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up? (**domestic violence**)
Covariates	Age	What is your age? (e.g., 18-24, 25-34, 35-44, 45-54, 55-64, 65 or older),
	Sex	Respondent identifies as male over the age of 18
	Race	Which one or more of the following would you say is your race? (e.g., Black)
	Household annual income	What is your annual household income from all sources? (e.g., ≤ $15,000, $15,000-$24,999, $25,000-$34,999, $35,000-$49,999, ≥ $50,000)
	Education attainment	What is the highest grade or year of school you completed? (e.g., less than high school, high school or GED, some college or technical school, college graduate)

	Employment status	Are you: (insert employment status)? (e.g., employed, unemployed, retired, unable to work)
	Marital status	Are you: (insert marital status)? (e.g., married, divorced, separated, widowed, never married)
	Health insurance coverage/Health care access	Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service? (**health insurance coverage**)
	Chronic medical condition	Has a doctor, nurse, or other health professional ever told you that you had a **stroke**?
	Chronic medical condition	Has a doctor, nurse, or other health professional ever told you that you had coronary **heart disease**?
	Chronic medical condition	Has a doctor, nurse, or other health professional ever told you that you have **diabetes**?
Mediators	Health behavioral risk	Do you now smoke cigarettes every day, some days, or not at all? (**smoking behavior**)
	Health behavioral risk	Please indicate if the following sexual risk situations apply to you: (1) Have used intravenous drugs in the past year; (2) Have been treated for a sexually transmitted or venereal disease in the past year; (3) Have given or received money or drugs in exchange for sex in the past year; and (4) Have had anal sex without a condom in the past year (**sexual risk behavior**)
	Health behavioral risk	One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average? (A 40-ounce beer would count as 3 drinks, or a cocktail drink with 2 shots would count as 2 drinks.) (**drinking behavior**)
Dependent Variables	Depression	Now thinking about your mental health, which includes stress, depression, and problems with emotions, during the past 30 days was your mental health not good? **(current depression)**
		Has a doctor, nurse, or other health professional ever told you that you have a depressive disorder, including depression, major depression, dysthymia, or minor depression (**lifetime diagnosis of depression**)

Missing Data

Missing data are not uncommon in varying types of research (Allison, 2009; Hyun Kang, 2013). The issues that arise, due to missing data, include invalid conclusions, reduced statistical power, or biased estimations. Some problems related to missing data also include participants refusing to respond to questions, respondents overlook or do not know the answer to questions or certain methods malfunctioned during data collection. Furthermore, in the case of longitudinal surveys, participants may relocate, or respondents will have died before data can be retrieved (Allison, 2009). For the current study, the BRFSS uses alternative responses to all the questions (i.e., 'don't know,' 'not sure,' 'refused,' or 'not asked or missing'). Though these variables contain actual values, the values are outside of the normal range (Gerlach & Garra, 2016). Therefore, for the present study, all data responses such as 'don't know,' 'not sure,' 'refused,' or 'not asked or missing' were excluded from primary analysis and coded as missing values.

Data Analysis

Data analyses were conducted using the Statistical Packages for Social Sciences version 25 (SPSS Statistics 25) Samples Module to account for multi-stage, complex survey design methods of the BRFSS (CDC & BRFSS, 2013b). Weights and stratification using stratum information were utilized from information provided in the 2012 BRFSS Codebook (CDC & BRFSS, 2013c). Frequency analysis provided prevalence estimates and confidence intervals of state-level data based on demographic information, variables related to chronic health conditions, health risk behaviors and ACEs for North Carolina and Tennessee (states that used the ACE optional modules in 2012). See Table 3.3 for Statistical Analysis Used for Research Questions and Table 3.4 for Research Questions Related to Independent and Dependent Variables.

Table 3.3

Statistical Analysis Used for Research Questions

Research Questions	Statistical Analysis
1. **What is the prevalence of ACEs among Black men?**	Descriptive Statistics
2. **What is the relationship/association between ACEs and depression among Black Men?**	Descriptive Statistics Binary Logistic Regression
3. **What is the relationship/association between presence of chronic medical condition and ACEs among Black Men?**	Descriptive Statistics Binary Logistic Regression
4. **What sociodemographic factors are associated with ACEs among Black Men?**	Descriptive Statistics Binary Logistic Regression
5. **Do health risk behaviors mediate the impact of ACES on depression among Black Men?**	Descriptive Statistics Binary Logistic Regression

Table 3.4

Research Questions Related to Independent and Dependent Variables

Research Questions	Independent Variable(s)	Dependent Variable(s)
1. **What is the prevalence of ACEs among Black men?**	*Direct ACEs:* PA, VA, SA *Environmental ACEs:* PMI, PPD, PSA, FMI, DIVRC, DOMV	N/A
2. **What is the relationship/association between ACEs and depression among Black Men?**	*Direct ACEs:* PA, VA, SA *Environmental ACEs:* PMI, PPD, PSA, FMI, DIVRC, DOMV	Current and Lifetime Depression

3.	**What is the relationship/association between presence of chronic medical condition and ACEs among Black Men?**	heart disease, stroke, and diabetes	*Direct ACEs:* PA, VA, SA *Environmental ACEs:* PMI, PPD, PSA, FMI, DIVRC, DOMV
4.	**What sociodemographic factors are associated with the ACEs among Black Men?**	age, marital status, educational attainment, employment status, health insurance coverage, household income	*Direct ACEs:* PA, VA, SA *Environmental ACEs:* PMI, PPD, PSA, FMI, DIVRC, DOMV
5.	**Do health risk behaviors mediate the impact of ACES on depression among Black Men?**	smoking behavior, binge drinking behavior, sexual risk behavior PA, VA, SA, PMI, PPD, PSA, FMI, DIVRC, DOMV	Current and Lifetime Depression

Note. PA = Physical Abuse; VA=Emotional/Verbal Abuse; SA=Sexual Abuse; PMI= Parental Mental Illness; PPD= Parental Problem Drinker; PSA= Parental Substance Abuse; FMI= Family Member Incarceration; DIVRC= Divorce; DOMV= Domestic Violence

Research Questions

The research questions used to guide this study, hypotheses that relate to each research question, and a description of the statistical analysis used for each are described hereafter.

RQ 1. *What is the prevalence of ACEs among Black men?* This research question is focused on determining the proportion of ACEs identified by Black men in the study sample. The purpose of this research question was to determine the prevalence of ACES among Black men. To examine the prevalence of ACES among Black men, descriptive statistics and frequencies were calculated in SPSS.

Ho1: The prevalence of ACEs among Black men will be comparable to findings in previous investigations of ACEs among Black men.

HA1: The prevalence of ACEs among Black men will not be comparable to findings in previous investigations of ACEs among Black men.

RQ 2. *What is the relationship/association between ACEs and depression among Black Men?* This research question is focused on determining if the independent variables (e.g., direct and environmental) ACEs have a statistically significant relationship with the dependent variable (e.g., current and lifetime diagnosis) of depression. The outcome variable of interest for this research question was depression. The hypotheses related to RQ2 are as follows:

Ho2: There will be no statistically significant relationship between direct and environmental ACEs and current and lifetime diagnosis of depression in Black men.

HA2: There will be a statistically significant relationship between direct and environmental ACEs and current and lifetime diagnosis of depression among Black men.

RQ 3. *What is the relationship/association between presence of chronic medical condition and ACEs among Black Men?* This research question is focused on determining if the independent variables (e.g., stroke, heart disease and diabetes) have a statistically significant relationship with the dependent variable (e.g. direct and environmental) ACEs. This question examined the association between chronic medical conditions and ACEs using logistic regression analysis. The outcome variable of interest for this research question was ACEs. The hypotheses related to RQ3 are as follows:

Ho3: There will be no statistically significant relationship between direct and environmental ACEs and chronic medical conditions among Black men.

HA3: There will be a statistically significant relationship between direct and environmental ACEs and chronic medical conditions among Black men.

RQ 4. *What sociodemographic factors are associated with ACEs among Black Men?* This research question is focused on determining if the independent variables (e.g., age, marital status, educational attainment, employment status, health insurance coverage, household income) have a statistically significant relationship with the dependent variable (direct and environmental) ACEs. This question examined the associations between sociodemographic factor variables and ACEs using logistic regression analysis. The outcome variable of interest for this research question was ACEs. The hypotheses related to RQ4 are as follows:

Ho4: There will be no statistically significant relationship between sociodemographic factors and direct and environmental ACEs among Black men.

HA4: There will be a statistically significant relationship between sociodemographic factors and direct and environmental ACEs among Black men.

RQ 5. *Do health risk behaviors mediate the impact of ACES on depression in Black Men?*

This research question, using logistic regression, was to determine if the independent variables (e.g., smoking behaviors, drinking behaviors, sexual risk behaviors) and ACE presence (e.g. by number) have a statistically significant relationship with the dependent variable (current and lifetime diagnosis) of depression. The outcome variable of interest for this research question was depression. The hypotheses related to RQ5 are as follows:

Ho5: Health risk behaviors do not mediate the relationship between ACEs and current and lifetime diagnosis of depression among Black men.

HA5: Health risk behaviors do mediate the relationship between ACEs and current and lifetime diagnosis of depression among Black men.

CHAPTER 4

RESULTS

The purpose of this study and research inquiry was to describe the relationship between differential exposure to ACE's and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

Study Sample

The adult respondent file contains 18,954 interviews and included data from the 2012 North Carolina (n = 11,898) and Tennessee (n = 7,056) Behavioral Risk Factor Surveillance System (BRFSS). For the current study, data were analyzed from 3,084 Black men participating in the two states. The year 2012 exist as the only timeframe where the ACE module was included in two participating states (North Carolina and Tennessee) BRFSS survey that had the highest sample of Black men; North Carolina (n= 2116) and Tennessee (n= 968).

The cooperation rates and response rates for BRFSS are calculated using standards set by the American Association of Public Opinion Research (AAPOR) (Definitions, 2016). The cooperation rate, defined as the number of completed interviews divided by the number of eligible respondents who were successfully reached by an interviewer, for each of the two states was 66.8% (North Carolina) and 70.7% (Tennessee). The response rate, which is defined as the number of respondents who completed the survey as a proportion of all eligible and likely eligible persons, for each of the two states was 40.4% (North Carolina) and 45.4% (Tennessee).

This study was exempt from human subjects' review as the data were obtained from public-use surveillance datasets.

Study Characteristics

The participant response, from Black men, for the 2012 BRFSS final sample was 3,084, which is the combined total from North Carolina (n= 2116) and Tennessee (n= 968), respectively. Descriptive statistical analysis was conducted to offer sample characteristics. The mean age of the participants in the study was 50.29 years old (M=50.29, SD=16.699). Table 4.1 presents the description of the study subjects' demographic characteristics. A little over one-half (52.8%) of the participants were employed at the time of the study. A majority (71.7%) of the men reported having health insurance, and 40.3% of the participants reported never being married. Many participants (35.7%) reported having completed a GED or high school and some technical school (32.8%) or some college. Of those who disclosed, 29.1% of the participants had an annual income over $50,000.

Table 4.1

Selected Demographics of the BRFSS Sample of Black Men

Characteristic	n[a]	Black %[b] (95%CI[c])
Age		
18-24	55	12.3 (9.3, 16.2)
25-34	120	17.4 (14.2, 21.1)
35-44	131	18.7 (15.5, 22.3)
45-54	191	22.7 (19.4, 26.4)
55-64	234	16.4 (14.1, 19.1)
65+	197	12.5 (10.3, 15.1)
Marital Status		
Married	371	37.8 (33.3, 42.4)
Divorced	164	12.5 (10.2, 15.2)
Separated	65	6.4 (4.7, 8.5)
Widowed	58	3.1 (2.1, 4.4)
Never married	274	40.3 (35.3, 45.4)
Educational attainment		
Less than high school	93	15.5 (11.7, 20.3)
High school or GED	328	35.7 (31.9, 39.8)
Some college or technical school	278	32.8 (29.0, 36.9)
College graduate	185	15.9 (13.3, 18.9)
Employment		
Employed	369	52.8 (48.3, 57.2)
Unemployed	116	17.1 (14.0, 20.7)
Retired	230	16.8 (14.2, 19.7)
Unable to work	136	13.4 (10.8, 16.4)
Health Insurance Coverage		
Has healthcare coverage	717	71.7 (67.4, 75.8)
No healthcare coverage	214	28.3 (24.2, 32.6)
Annual Income		
Less than or equal to $14,999	151	18.4 (15.3, 22.0)
$15,000-$24,999	192	26.7 (22.7, 31.1)
$25,000-$34,999	114	14.1 (11.1, 17.7)
$35,000-$49,999	106	11.7 (9.2, 14.8)
Greater than or equal to $50,000	213	29.1 (25.4, 33.2)

Note: [a]Unweigthed number of respondents in North Carolina and Tennessee; [b]weighted percentages; [c]confidence interval (CI); Some predictors do not add up to total sample due to missing values.

Research Questions

***RQ 1**: What is the prevalence of ACEs among Black men?*

This research question was focused on determining the proportion of the total number of ACEs (e.g., ACE score), as well as direct and environmental ACEs (e.g., by type), identified by Black men. Descriptive statistics were used to obtain prevalence estimates for ACEs.

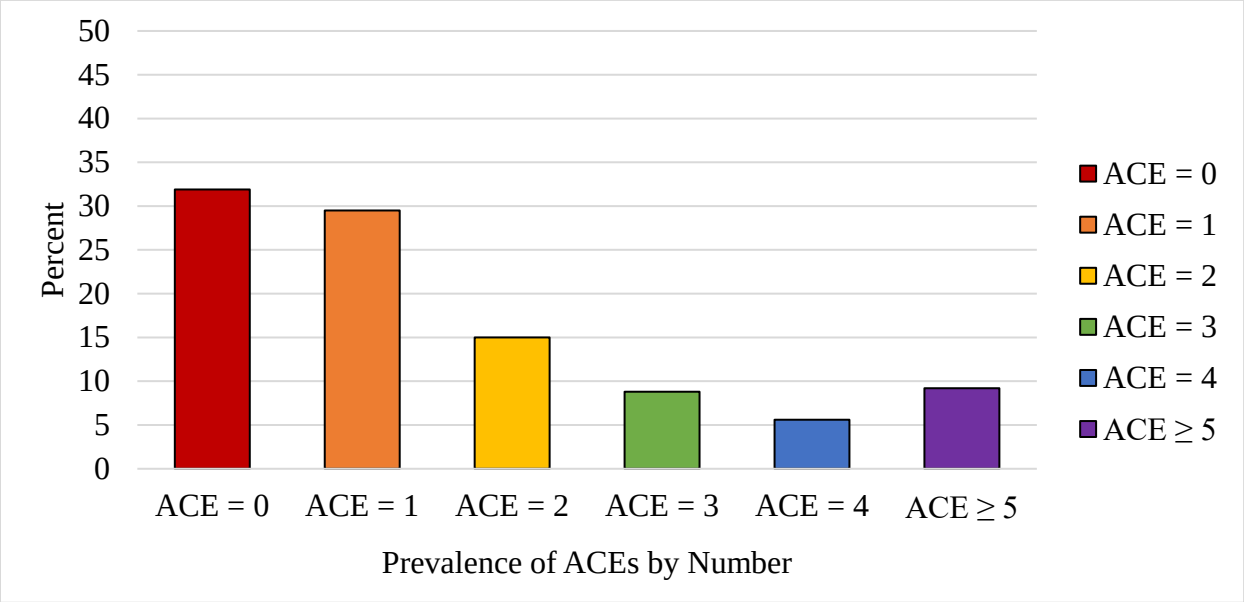

Figure 4.1 Prevalence of reported ACEs by number in BRFSS sample of Black men.

Prevalence of ACEs by Number. The probe on the reported number of ACEs was used to gauge how many Black men, overall, reported exposure to no ACEs or more than 5 ACEs. According to Figure 4.1, overall, (31.9%) of the Black men reported experiencing 0 ACEs, (29.5%), 1 ACE; (15.0%), 2 ACEs; (8.8%), 3 ACEs; (5.6%), 4 ACEs; and (9.2%), 5 ACEs.

Prevalence of Direct ACEs by Type. According to Figure 4.2, of the participants in the analysis, (9.8%) of Black men, before age 18, reported exposure to physical abuse; (26.2%), verbal abuse; (2.7%), sexual abuse.

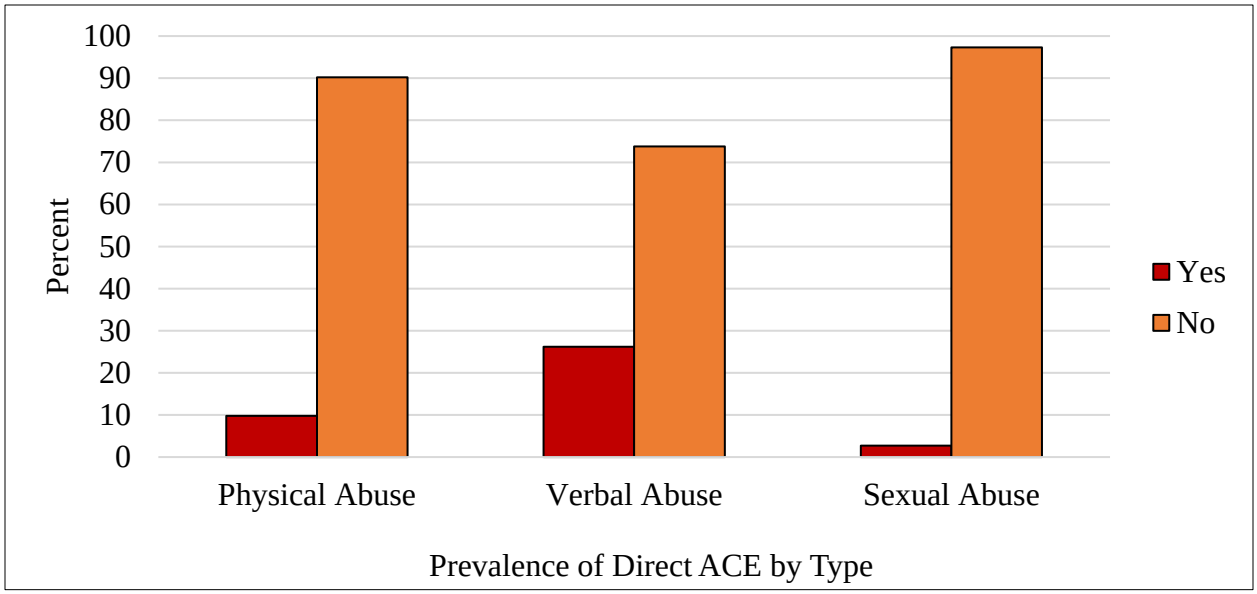

Figure 4.2 Prevalence of reported direct ACEs by type in BRFSS sample of Black men.

Prevalence of Environmental ACEs by Type. According to Figure 4.3, of the participants in the analysis, (6.8%) reported exposure to household member mental illness; (22.0%), household member alcohol misuse; (12.9), household member substance misuse; (17.6), household member incarceration; (38.8%), divorce; and (21.0%) of Black men, reported exposure to domestic violence.

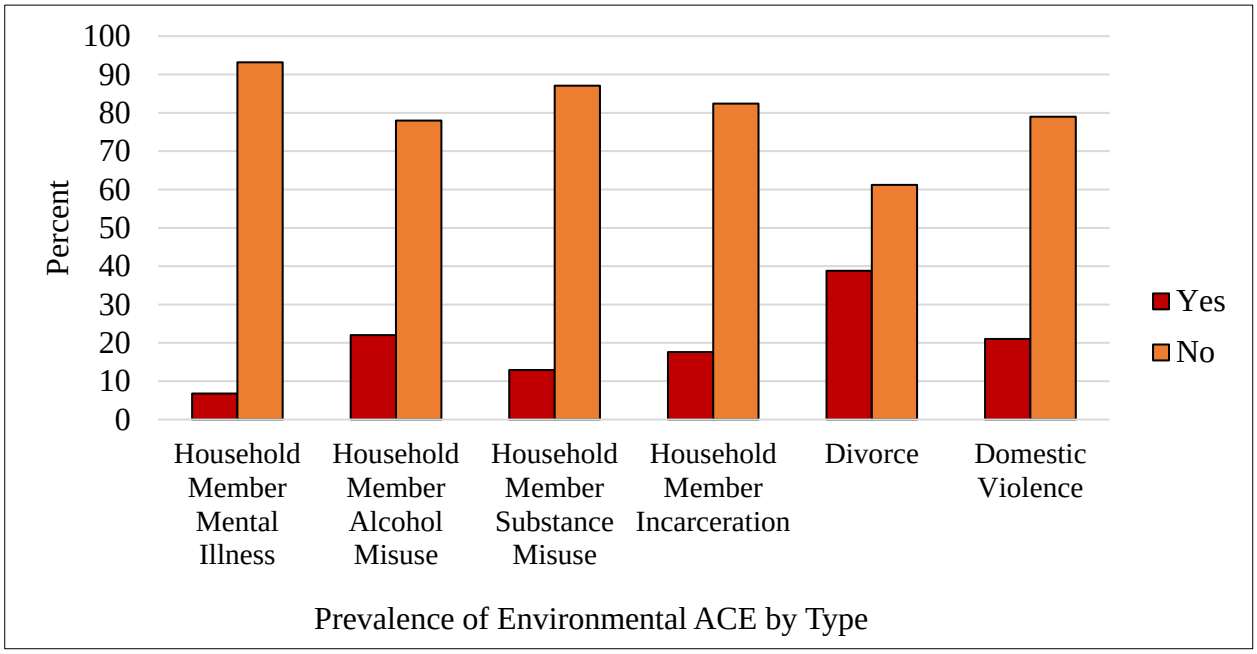

Figure 4.3 Prevalence of reported environmental ACEs by type in BRFSS sample of Black men.

ACEs by Number and Selected Demographics. Research shows that as the number of ACE exposure increases the risk of experiencing adverse health-related outcomes in adulthood increases (Felitti et al., 1998). According to Enlow, Blood & Egeland (2003), adverse sociodemographic conditions may have additive effects in increasing risk for adverse health-related outcomes beyond associated exposure to trauma. Thus, the prevalence of ACEs by number was further explored using selected descriptive demographic information.

Age. When probed about the presence or nonpresence (e.g., the number) of ACEs by age, of the participants in the analysis, (49.2%) of Black men, age 65 and older, reported no exposure to ACEs; (31.1%), ages 35 to 44, 1 ACE; (19.7%), ages 25 to 34, 2 ACEs; (11.7%), ages 55 to 64, 3 ACEs; (8.9%), ages 18 to 24, 4 ACEs; and (23.8%) of Black men, ages 18 to 24, reported exposure to more than 5 ACEs.

Marital Status. When probed about the presence or nonpresence of ACEs by marital status, of the participants in the analysis, (50.0%) of widowed Black men reported no exposure to ACEs; (34.4%), never married, 1 ACE; (20.1%), separated, 2 ACEs; (18.6%), widowed, 3 ACEs; (12.7%), separated, 4 ACEs; and (13.2%) of Black men who never married reported exposure to more than 5 ACEs.

Education. The probe on ACE presence by education revealed (37.0%) of Black men who completed high school or received a GED reported no exposure to ACEs; (37.5%), less than high school, 1 ACE; (17.6%), graduated college, 2 ACEs; (10.7%), college graduate, 3 ACEs; (6.4%), high school or GED, 4 ACEs; and (16.5%) of Black men who received less than a high school diploma, more than 5 ACEs.

Employment. The reported estimates of ACE presence by employment demonstrated (42.6%) of retired Black men reported no exposure to ACEs; (33.7%), retired, 1 ACE; (16.9%),

unemployed, 2 ACEs; (12.4%), unable to work, 3 ACEs; (10.4%), unemployed, 4 ACEs; and (11.7%) unemployed, reported exposure to more than 5 ACEs.

Health Insurance. When probed about the presence or nonpresence of ACEs by health insurance coverage (35.5%) of Black men with health insurance reported no exposure to ACEs; (33.4%), no health insurance, 1 ACE; (15.1%), with health insurance, 2 ACEs; (9.5%), with health insurance, 3 ACEs; (10.7%), without health insurance, 4 ACEs; and (12.1%) without health insurance, reported exposure to more than 5 ACEs.

Annual Income. The prevalence estimates related to ACE presence by annual income revealed (39.8%) of Black men earning an annual income of $35,000 to 49,999 reported no exposure to ACEs; (37.4%), $25,000 to $34,999, 1 ACE; (21.6%), more than $50,000, 2 ACEs; (10.2%), less than $15,000, 3 ACEs; (11.7%), less than $15,000, 4 ACEs; and (20.8%) less than $15,000, exposure to more than 5 ACEs.

ACEs by Type and Selected Demographics. ACEs can be characterized as *direct* or *environmental*, which can offer a more streamlined view on *types* of early childhood adversity. For this study, direct ACEs are defined as childhood exposure to physical, sexual, or verbal abuse (Felitti, 1998, Utah Department of Health, 2015). Environmental ACEs, for this study, are defined as childhood exposure to household adults living with a mental illness, living with a substance use disorder, experiencing an alcohol problem or living with an alcohol addiction, experiencing divorce, engaging in domestic violence and undergoing the experience of household member incarceration (Felitti, 1998, Utah Department of Health, 2015). The prevalence of direct and environmental ACEs was further explored using selected descriptive demographic information.

Age. When probed about the presence or nonpresence (e.g., the type) of direct ACEs by age, of the participants in the analysis, (15.1%) of Black men ages 25 to 34 reported exposure to physical abuse; (38.3%), ages 25 to 34, verbal abuse; and (6.5%) of Black men, ages 25 to 34,

reported early exposure to sexual abuse. When probed about the presence or nonpresence of environmental ACEs by age, of the participants in the analysis (10.0%) of Black men, ages 25 to 34, reported exposure to household member mental illness; (30.8%), ages 55 to 64, household member alcohol misuse; and (23.8%) of Black men, ages 18 to 24, reported household member substance misuse. Additionally, (60.9%) of Black men, ages 18 to 24, reported experiencing divorce in childhood; (26.8%), ages 45 to 54, domestic violence; and (32.8%) of Black men, ages 18 to 24, reported experiencing household member incarceration.

Marital Status. When probed about the presence or nonpresence of direct ACEs by marital status, of the participants in the analysis, (18.2%) of divorced Black men reported exposure to physical abuse; (31.0%), widowed Black men reported exposure to verbal abuse; and (8.1%) of separated Black men reported early exposure to sexual abuse. The probe on environmental ACE presence by marital status revealed, of the participants in the analysis, (9.3%) of Black men, who were divorced, reported exposure to household member mental illness; (32.3%), who were separated, household member alcohol misuse; and (27.0%) of separated Black men reported exposure to household member substance misuse. Also, (47.3%) of Black men, who were never married, reported experiencing divorce, before age 18; (32.6%), who were divorced, reported experiencing domestic violence; and (26.3%) of separated Black men reported exposure to household member incarceration.

Educational Attainment. The reported estimates of direct ACE presence by education demonstrated, of the participants in the analysis, (12.2%) of Black men with less than a high school diploma reported physical abuse; (33.0%), who received some college or technical school, verbal abuse; and (3.6%) of Black men, who completed high school, reported sexual abuse. The reported estimates of environmental ACE presence by education revealed (8.9%) of

Black men who completed high school reported exposure to household member mental illness; (27.1%), who received less than a high school diploma, reported household member alcohol misuse; and (19.3%) of Black men, who received less than a high school diploma, reported household member substance misuse. Indeed, of the participants included in the analysis, (47.2%) of Black men who completed some college or technical school reported experiencing divorce in childhood; (23.7%), who graduated college, reported experiencing domestic violence in childhood; and (38.9%) of Black men, who received less than a high school diploma, reported household member incarceration.

Employment. When probed about the presence or nonpresence of direct ACEs by employment, of the participants in the analysis, (15.5%) of Black men unable to work reported exposure to physical abuse; (30.9%), who were unemployed, verbal abuse; and (6.5%) of separated Black men reported early exposure to sexual abuse. The reported estimates of environmental ACE presence by employment revealed (7.5%) of Black men, who were unemployed, reported exposure to household member mental illness; (29.2%), who were unemployed, household member alcohol misuse; and (18.1%) of Black men, who were unemployed at the time of study, reported exposure to household member substance misuse. In addition, (43.2%) of Black men, who were employed, reported experiencing divorce in childhood; (29.9%), who were unemployed, reported experiencing domestic violence; and (28.7%) of Black men, who were unemployed at the time of study, reported exposure to household member incarceration.

Health Insurance. Pertaining to the prevalence of direct ACEs by health insurance, the results demonstrated, (9.9%) of Black men without health insurance, reported physical abuse; (28.7%), without health insurance, verbal abuse; and (3.4%) of Black men, without health

insurance, reported sexual abuse. The reported estimates of environmental ACE presence by health insurance showed, (9.5%) of Black men without health insurance, reported exposure to household member mental illness; (27.9%), without health insurance, household member alcohol misuse; and (20.9%) of Black men, without health insurance, reported exposure to household member substance misuse. Also, according (45.0%) of Black men without health insurance, reported experiencing divorce in childhood; (24.5%), without health insurance, domestic violence; and (30.2%) of Black men, without health insurance, reported exposure to household member incarceration.

Annual Income. The reported estimates of direct ACE presence by annual income demonstrated, of the participants in the analysis**,** (14.0%) of Black men with an annual income of $35,000 to 49,000 reported exposure to physical abuse; (30.9%), earning less than $15,000, verbal abuse; and (4.8%), earning less than $15,000, sexual abuse. Pertaining to the prevalence of environmental ACEs by annual income, (12.8%) of Black men with an annual income of $35,000 to 49,000 reported exposure to household member mental illness; (33.8%), earning less than $15,000, household member alcohol misuse; and (23.6%), earning less than $15,000, household member substance misuse. Indeed, (48.2%) of Black men with an annual income less than $15,000, reported experiencing divorce in childhood; (24.4%), earning $35,000 to $49,000, domestic violence; and (28.4%), earning $15,000 to $24,999, household member incarceration.

RQ 2*. What is the relationship/association between ACEs and depression among Black Men?*

This research question is focused on determining if the independent variables (e.g., direct and environmental) ACEs have a statistically significant relationship with the dependent variable (e.g., current and lifetime diagnosis) of depression.

Current Depression. The *Nagelkerke R Square* value, calculating the explained variation for current depression, demonstrated that the model accounted for 18.1% of the variance explained in lifetime diagnosis of depression (Nagelkerke's Pseudo $R^2 = 0.181$). As shown in Table 4.2, the overall relationship between current depression and physical abuse was statistically significant ($\alpha = 0.05$, $p < 0.05$). Also, the overall relationship between current depression and household member incarceration was statistically significant ($\alpha = 0.05$, $p < 0.05$). Black men who experienced physical abuse, a direct ACE, before age 18, were 3.03 times more likely to self-report current depression compared to Black men who did not report experiencing physical abuse (OR = 3.03; 95% CI [1.45, 6.30]; $p < 0.05$). Additionally, Black men who experienced household member incarceration, an environmental ACE, before age 18, were 2.05 times more likely to self-report current depression compared to Black men who did not report experiencing household member incarceration (OR = 2.05; 95% CI [1.03, 4.05]; $p < 0.05$).

Comparisons were made between the three types of direct ACEs and six types of environmental ACEs, controlling for sociodemographic factors using the first category as the reference, defined as individuals who reported "No" to being exposed to ACEs. The direct ACEs, verbal abuse ($p = .561$) and sexual abuse ($p = .609$) were not statistically significant predictors of current depression in this model ($\alpha = 0.05$, $p > 0.05$). Furthermore, the environmental ACEs, household member mental illness ($p = .445$); household member alcohol misuse ($p = .416$); household member substance misuse ($p = .848$); household member incarceration ($p = .040$); divorce ($p = .537$); and domestic violence ($p = .159$), were not statistically significant predictors of current depression in this model ($\alpha = 0.05$, $p > 0.05$).

Lifetime Diagnosis of Depression. The *Nagelkerke R Square* values, calculating the explained variation for lifetime diagnosis of depression, demonstrated that the model accounted

for 32.1% of the variance explained in lifetime diagnosis of depression (Nagelkerke's Pseudo R^2 = 0.321). Overall, comparisons were made between three types of direct ACEs and six types of environmental ACEs, controlling for sociodemographic factors, using the first category as the reference, which was defined as individuals who reported "No" to being exposed to either a direct or environmental ACE. As shown in Table 4.2, the overall relationship between lifetime diagnosis of depression and verbal abuse was statistically significant (α= 0.05, $p < 0.05$). Also, the overall relationship between lifetime diagnosis of depression and divorce was statistically significant (α= 0.05, $p < 0.05$). Black men who experienced verbal abuse, before age 18, were 2.58 times more likely to report lifetime diagnosis of depression compared to Black men who did not report experiencing verbal abuse (OR = 2.58; 95% CI [1.17, 5.67]; $p < 0.05$).

Table 4.2

ACE Type Factors Associated with Depression

	Current Depression		**Lifetime Diagnosis of Depression**	
Characteristics	**OR (95% CI)**	***P*-value**	**OR (95% CI)**	***P*-value**
Physical Abuse[a]	3.03 (1.45-6.30)	.003*	2.02 (0.82-4.97)	.125
Verbal Abuse[a]	1.18 (0.66-2.11)	.561	2.58 (1.17-5.67)	.018*
Sexual Abuse[a]	0.67 (0.14-3.08)	.609	1.15 (0.17-7.68)	.881
Household Member Mental Illness[b]	0.66 (0.22-1.91)	.445	0.26 (0.05-1.28)	.099
Household Member Alcohol Misuse[b]	1.29 (0.69-2.41)	.416	1.22 (0.54-2.72)	.625
Household Member Substance Misuse[b]	1.08 (0.47-2.48)	.848	1.89 (0.64-5.56)	.246
Household Member Incarceration[b]	2.04 (1.03-4.05)	.040*	0.69 (0.24-1.96)	.495
Divorce[b]	0.85 (0.50-1.42)	.537	2.16 (1.10-4.23)	.024*
Domestic Violence[b]	1.52 (0.84-2.73)	.159	1.27 (0.57-2.83)	.552

Note: [a]Direct ACE; [b]Environmental ACE; OR = odds ratio; CI= confidence interval; Reference category is "No" to being exposed to the direct or environmental ACE.
* $p < .05$.

According to Table 4.2, Black men who experienced divorce, before age 18, were 2.16 times more likely to report lifetime diagnosis of depression compared to Black men who did not experience divorce (OR = 2.16; 95% CI [1.10, 4.23]; $p < 0.05$). The direct ACEs, physical abuse (p =.125) and sexual abuse (p = .881) and environmental ACEs, household member mental illness (p = .099); household member alcohol misuse (p = .625); household member substance misuse (p = .246); household member incarceration (p = .495); and domestic violence (p = .552) were not significant predictors of lifetime diagnosis of depression in this model (α= 0.05, $p >$ 0.05).

RQ 3*. What is the relationship/association between presence of chronic medical conditions and ACEs among Black Men?*

This research question is focused on determining if the independent variables (e.g., stroke, heart disease and diabetes) have a statistically significant relationship with the dependent variable (e.g., direct or environmental) ACEs. This question examined the association between chronic health conditions and ACEs. The outcome variable of interest for this research question were ACEs. Individual comparisons were made between the direct and environmental ACE variables and the three types of chronic medical conditions, controlling for sociodemographic factors, using the first category as the reference, defined as individuals who reported "No" to being diagnosed with any of the chronic medical conditions (e.g., stroke, diabetes, heart disease).

Direct ACEs and chronic health conditions

Physical abuse. According to the *Nagelkerke R Square* value, the model accounted for 8.3% of the variance explained in physical abuse (Nagelkerke's Pseudo R^2 = 0.083). The overall relationship between physical abuse, a direct ACE, and stroke was statistically significant (α= 0.05, $p < 0.05$). Black men who reported a stroke diagnosis were 4.14 times more likely to report

experiencing physical abuse, before age 18, compared to Black men who did not report a stroke diagnosis (OR = 4.14; 95% CI [1.69, 10.12]; $p < 0.05$). The chronic medical conditions, heart disease (p =.690) and diabetes (p = .804), were not statistically significant predictors of physical abuse in this model (α= 0.05, $p > 0.05$).

Verbal abuse. The *Nagelkerke R Square* value was .093, which meant the model accounted for 9.3% of the variance explained in verbal abuse. The chronic medical conditions, heart disease (p =.221); stroke (p = .204); and diabetes (p = .323), were not statistically significant predictors of verbal abuse in the model (α= 0.05, $p > 0.05$).

Sexual abuse. According to the *Nagelkerke R Square* value, calculating the explained variation for sexual abuse, the model accounted for 17.7% of the variance (Nagelkerke's Pseudo R^2 = 0.177). The chronic medical conditions, heart disease (p =.725); stroke (p =.950); and diabetes (p = .642), were not statistically significant predictors of sexual abuse in the model (α= 0.05, $p > 0.05$).

Environmental ACEs and chronic health conditions

Household member mental illness. The *Nagelkerke R Square* value was 0.85, which meant the model accounted for 8.5% of the variance explained in household member mental illness. The chronic medical conditions, heart disease (p =.399); stroke (p =.996); and diabetes (p = .224), were not statistically significant predictors of household member mental illness in the model (α= 0.05, $p > 0.05$).

Household member alcohol misuse. According to the *Nagelkerke R Square* value, calculating the explained variation for household member alcohol misuse, the model accounted for 4.9% of the variance (Nagelkerke's Pseudo R^2 = 0.049). The chronic medical conditions,

heart disease (p =.079); stroke (p =.314); and diabetes (p = .101), were not statistically significant predictors of household member alcohol misuse in the model (α= 0.05, $p > 0.05$).

Household member substance misuse. The *Nagelkerke R Square* value was 0.149, which meant the model accounted for 14.9% of the variance. The chronic medical conditions, heart disease (p =.083); stroke (p =.715); and diabetes (p = .199), were not statistically significant predictors of household member substance misuse in the model (α= 0.05, $p > 0.05$).

Household member incarceration. According to the *Nagelkerke R Square* value, calculating the explained variation for household member incarceration, the model accounted for 10.7% of the variance (Nagelkerke's Pseudo $R^2 = 0.107$). The chronic medical conditions, heart disease (p =.058); stroke (p =.830); and diabetes (p = .078), were not statistically significant predictors of household member incarceration in the model (α= 0.05, $p > 0.05$).

Divorce. The *Nagelkerke R Square* value was 0.123, which meant the model accounted for 12.3% of the variance explained in divorce. The chronic medical conditions, heart disease (p =.292); stroke (p =.625); and diabetes (p = .750), were not statistically significant predictors of divorce in the model (α= 0.05, $p > 0.05$).

Domestic violence. According to the *Nagelkerke R Square* value, calculating the explained variation for domestic violence, the model accounted for 8.1% of the variance (Nagelkerke's Pseudo $R^2 = 0.081$). The chronic medical conditions, heart disease (p =.116); stroke (p =.306); and diabetes (p = .225), were not statistically significant predictors of domestic violence in the model (α= 0.05, $p > 0.05$).

RQ 4. *What sociodemographic factors are associated with ACEs in Black Men?*

This research question examined the association between sociodemographic factors and ACES using logistic regression analysis. Research shows that ACE exposure increases the risk of

experiencing adverse health-related outcomes in adulthood increases (Felitti et al., 1998). According to Enlow, Blood & Egeland (2003), adverse sociodemographic conditions may have additive effects in increasing risk for adverse health-related outcomes beyond associated exposure to trauma. Thus, comparisons were made between the direct and environmental ACEs and six sociodemographic factors, using the first category as the reference. The outcome variable of interest for this research question was ACEs.

Physical Abuse. Table 4.3 shows overall relationship between physical abuse and marital status was statistically significant ($\alpha = 0.05$, $p < 0.05$). The odds of reporting physical abuse are 2.12 times higher for Black men who were divorced, compared to married Black men (OR = 2.12; 95% CI [1.14, 3.93]; $p < 0.05$). Also, the odds of reporting physical abuse are 2.32 times higher for Black men who were widowed, compared to married Black men (OR = 2.32; 95% CI [1.02, 5.26]; $p < 0.05$). The remaining sociodemographic factors were not statistically significant predictors in the model ($\alpha = 0.05$, $p > 0.05$).

Table 4.3

ACEs by Type Associated with Sociodemographic Factors

	Physical Abuse		**Verbal Abuse**	
Characteristics	**OR (95% CI)**	***P*-value**	**OR (95% CI)**	***P*-value**
Age				
18-24	Ref		Ref	
25-34	2.06 (0.66-6.45)	.213	1.16 (0.59-2.29)	.656
35-44	1.26 (0.38-4.15)	.703	0.73 (0.36-1.47)	.382
45-54	1.27 (0.40-3.98)	.678	0.72 (0.37-1.39)	.328
55-64	0.80 (0.25-2.56)	.708	2.35 (1.20-4.58)	.012*
65+	1.41 (0.45-4.40)	.548	3.95 (1.87-8.33)	.000*
Marital Status				
Married	Ref		Ref	
Divorced	2.12 (1.14-3.93)	.017*	0.97 (0.60-1.56)	.914
Separated	1.43 (0.52-3.94)	.483	0.72 (0.32-1.61)	.427
Widowed	2.32 (1.02-5.26)	.044*	1.25 (0.66-2.39)	.485

Never Married	0.99 (0.53-1.85)	.991	1.32 (0.91-1.93)	.136
Education				
< High school	Ref			
High school or GED	1.09 (0.45-2.60)	.843	0.96 (0.53-1.74)	.906
Some college or TS[b]	1.14 (0.47-2.76)	.759	1.40 (0.77-2.52)	.262
College graduate	1.05 (0.41-2.68)	.917	1.14 (0.61-2.15)	.668
Employment				
Employed	Ref		Ref	
Unemployed	1.32 (0.63-2.73)	.456	1.10 (0.68-1.78)	.691
Retired	1.08 (0.58-1.99)	.805	2.51 (1.57-4.01)	.000*
Unable to work	1.61 (0.84-3.07)	.145	1.69 (1.01-2.82)	.043*
Health Insurance				
Has health insurance	1.17 (0.68-2.00)	.553		.366
Annual Income				
≤ $15,000	Ref		Ref	
$15,000-$24,999	0.72 (0.34-1.50)	.390	0.80 (0.47-1.33)	.397
$25,000-$34,999	0.96 (0.43-2.12)	.919	0.63 (0.34-1.16)	.141
$35,000-$49,999	1.15 (0.53-2.49)	.710	0.86 (0.48-1.56)	.639
≥ $50,000	0.52 (0.24-1.13)	.100	1.02 (0.62-1.67)	.922

Note: OR = odds ratio; CI= confidence interval; HM[a] = Household Member; [b]TS = technical school; Reference category is "No" to having health insurance coverage.
* $p < .05$.

Verbal Abuse. Table 4.3 shows that the overall relationship between verbal abuse, age and employment was statistically significant ($\alpha = 0.05$, $p < 0.05$). According to Table 4.3, for age, Black men age 18 to 24 is the established reference category. The odds of reporting verbal abuse are 2.35 times higher for Black men, age 18 to 24, at the time of the study compared to Black men, age 55 to 64 (OR = 2.35; 95% CI [1.20, 4.58]; $p < 0.05$). Also, the odds of reporting verbal abuse are 3.95 times higher for Black men, age 18 to 24, at the time of the study, compared to Black men age 65 or older (OR = 3.95; 95% CI [1.87, 8.33]; $p < 0.05$). According to Table 4.3, for employment, Black men who were employed is the established reference category. Indeed, the odds of reporting verbal abuse are 2.51 times higher for Black men, who were employed, at the time of the study compared to Black men, who were retired (OR = 2.51; 95% CI [1.57, 4.01];

$p < 0.05$). Additionally, the odds of reporting verbal abuse are 1.69 times higher for Black men, who were employed, at the time of the study, compared to Black men, unable to work (OR = 1.69; 95% CI [1.01, 2.82]; $p < 0.05$). The remaining sociodemographic indicators were not statistically significant predictors in this model ($\alpha = 0.05$, $p > 0.05$).

Sexual Abuse. Table 4.4 shows the overall relationship between sexual abuse, age, marital status, and annual income was statistically significant ($\alpha = 0.05$, $p < 0.05$). The odds of reporting sexual abuse are 5.03 times higher for Black men, age 18 to 24, compared to Black men, age 65 or older (OR = 5.03; 95% CI [0.81, 31.25]; $p < 0.05$). The odds of reporting sexual abuse are 2.34 times higher for Black men who were never married compared to married Black men (OR = 2.34; 95% CI [1.05, 5.20]; $p < 0.05$). Also, the odds of reporting sexual abuse are 4.76 times higher for Black men, earning less than or equal to $15,000, compared to Black men earning $25,000 to $34,999 (OR = 4.76; 95% CI [1.03, 21.73]; $p < 0.05$). The remaining sociodemographic indicators were not statistically significant ($\alpha = 0.05$, $p > 0.05$).

Table 4.4

ACEs by Type Associated with Sociodemographic Factors

	Sexual Abuse		**HM[a] Mental Illness**	
Characteristics	**OR (95% CI)**	***P*-value**	**OR (95% CI)**	***P*-value**
Age				
18-24	Ref		Ref	
25-34	1.46 (0.38-5.57)	.573	0.72 (0.26-1.95)	.523
35-44	0.55 (0.11-2.55)	.447	0.52 (0.18-1.50)	.231
45-54	1.22 (0.33-4.51)	.763	0.66 (0.25-1.70)	.392
55-64	0.54 (0.13-2.20)	.397	3.07 (1.11-8.47)	.031*
65+	5.02 (0.81-31.25)	.082*	0.37 (0.13-1.06)	.064
Marital Status				
Married	Ref		Ref	
Divorced	1.71 (0.63-4.59)	.285	1.07 (0.47-2.41)	.864
Separated	0.71 (0.08-5.70)	.750	1.05 (0.30-3.67)	.939
Widowed	1.89 (0.50-7.10)	.345	2.68 (1.11-6.43)	.027*

Never Married	2.34 (1.05-5.20)	.037*	1.47 (0.78-2.75)	.230
Education				
< High school	Ref		Ref	
High school or GED	0.60 (0.22-1.63)	.317	1.66 (0.56-4.96)	.359
Some college or TS[b]	0.53 (0.18-1.51)	.240	1.70 (0.56-5.12)	.345
College graduate	0.63 (0.21-1.90)	.420	1.49 (0.46-4.76)	.501
Employment				
Employed	Ref		Ref	
Unemployed	1.32 (0.54-3.25)	.536	1.46 (0.65-3.27)	.359
Retired	0.45 (0.16-1.24)	.125	0.79 (0.37-1.72)	.566
Unable to work	0.59 (0.19-1.78)	.355	1.52 (0.71-3.24)	.275
Health Insurance				
Has health insurance	1.07 (0.49-2.30)	.863	1.77 (1.02-3.06)	.042*
Annual Income				
≤ $15,000	Ref		Ref	
$15,000-$24,999	0.44 (0.16-1.18)	.017	0.59 (0.26-1.31)	.197
$25,000-$34,999	4.76 (1.03-21.73)	.046*	0.33 (0.10-1.04)	.059
$35,000-$49,999	0.32 (0.08-1.19)	.091	0.96 (0.42-2.18)	.922
≥ $50,000	0.64 (0.27-1.53)	.324	0.76 (0.36-1.59)	.475

Note: OR = odds ratio; CI= confidence interval; HM[a] = Household Member; [b]TS = technical school; Reference category is "No" to having health insurance coverage.
* $p < .05$.

Household Member Mental Illness. Table 4.4 shows the relationship between household member mental illness, age, marital status, and health insurance was statistically significant ($\alpha = 0.05$, $p < 0.05$). The odds of reporting childhood exposure to household member mental illness are 3.08 times higher for Black men, age 18 to 24, compared to Black men, age 55 to 64 (OR = 3.08; 95% CI [1.11, 8.47]; $p < 0.05$). The odds of reporting household member mental illness are 2.68 times higher for Black men who were widowed, compared to married Black men (OR = 2.68; 95% CI [1.11, 6.43]; $p < 0.05$). Additionally, the odds of reporting childhood exposure to household member mental illness are 1.77 times higher for Black men who reported having health insurance, compared to Black men who did not report having health insurance (OR =

1.77; 95% CI [1.02, 3.06]; $p < 0.05$). The remaining sociodemographic indicators were not statistically significant ($\alpha = 0.05$, $p > 0.05$).

Household Member Alcohol Misuse. Table 4.5 shows the relationship between household member alcohol misuse, age, marital status, and annual income was statistically significant ($\alpha = 0.05$, $p < 0.05$). The odds of reporting household member alcohol misuse are 2.13 times higher for Black men, age 18 to 24, compared to those, age 65 or older (OR = 2.13; 95% CI [1.00, 4.48]; $p < 0.05$). The odds of reporting household member alcohol misuse are about two times higher for widowed men, compared to married men (OR = 1.98; 95% CI [1.06, 3.702]; $p < 0.05$). Also, the odds of reporting household member alcohol misuse are 1.83 times higher for Black men, earning less than or equal to $15,000, compared to those earning $15,000 to $24,999 (OR = 1.83; 95% CI [1.09, 3.07]; $p < 0.05$). The remaining factors were not statistically significant ($\alpha = 0.05$, $p > 0.05$).

Table 4.5

ACEs by Type Associated with Sociodemographic Factors

	HM[a] Alcohol Misuse		HM[a] Substance Misuse	
Characteristics	**OR (95% CI)**	***P*-value**	**OR (95% CI)**	***P*-value**
Age				
18-24	Ref		Ref	
25-34	0.81 (0.38-1.70)	.583	0.78 (0.34-1.77)	.555
35-44	0.73 (0.34-1.56)	.424	0.60 (0.25-1.40)	.239
45-54	0.95 (0.47-1.91)	.891	0.67 (0.30-1.47)	.321
55-64	1.03 (0.52-2.04)	.916	3.16 (1.37-7.29)	.007*
65+	2.12 (1.00-4.48)	.047*	8.26 (2.73-25.00)	.000*
Marital Status				
Married	Ref		Ref	
Divorced	1.03 (0.63-1.67)	.901	1.17 (0.60-2.30)	.636
Separated	1.04 (0.49-2.20)	.899	0.72 (0.21-2.49)	.615
Widowed	1.98 (1.06-3.70)	.030*	3.64 (1.77-7.45)	.000*
Never Married	1.44 (0.98-2.11)	.062	1.72 (1.01-2.91)	.042*
Education				

< High school	Ref		Ref	
High school or GED	0.76 (0.43-1.34)	.350	2.02 (1.02-4.00)	.041*
Some college or TS[b]	0.79 (0.44-1.39)	.416	0.75 (0.38-1.45)	.401
College graduate	0.86 (0.47-1.56)	.622	3.11 (1.36-7.09)	.007*
Employment				
Employed	Ref		Ref	
Unemployed	1.29 (0.77-2.17)	.318	1.83 (0.99-3.38)	.052*
Retired	0.67 (0.42-1.07)	.099	2.20 (1.07-4.54)	.032*
Unable to work	1.35 (0.84-2.18)	.204	1.10 (0.57-2.11)	.774
Health Insurance				
Has health insurance	1.35 (0.93-1.95)	.108	2.12 (1.34-3.35)	.001*
Annual Income				
≤ $15,000	Ref		Ref	
$15,000-$24,999	1.83 (1.09-3.07)	.022*	0.59 (0.31-1.11)	.104
$25,000-$34,999	0.61 (0.34-1.11)	.110	2.78 (1.20-6.45)	.017*
$35,000-$49,999	0.71 (0.40-1.27)	.257	0.47 (0.21-1.03)	.060
≥ $50,000	0.66 (0.40-1.08)	.099	1.99 (1.05-3.75)	.033*

Note: OR = odds ratio; CI= confidence interval; HM[a] = Household Member; [b]TS = technical school; Reference category is "No" to having health insurance coverage.
* $p < .05$.

Household Member Substance Misuse. Table 4.5 demonstrates the relationship between household member substance misuse, age, marital status, and annual income was statistically significant ($\alpha = 0.05$, $p < 0.05$). According to Table 4.5, for age, Black men age 18 to 24 is the established reference category. Thus, the odds of reporting household member substance misuse are 3.16 times higher for Black men, age 18 to 24, compared to Black men, age 55 to 64 (OR = 3.16; 95% CI [1.37, 7.299]; $p < 0.05$). The odds of reporting childhood exposure to household member substance misuse are 8.26 times higher for Black men, age 18 to 24, compared to Black men age 65 or older (OR = 8.26; 95% CI [2.73, 25.00]; $p < 0.05$).

According to Table 4.5, for marital status, Black men who were married, at the time of the study, is the established reference category. Additionally, the odds of reporting household member substance misuse are 3.64 times higher for Black men who were widowed, at the time of

the study compared to married Black men (OR = 3.64; 95% CI [1.77, 7.45]; $p < 0.05$). Also, the odds of reporting household member substance misuse are 1.72 times higher for Black men who were never married, at the time of the study compared to married Black men (OR = 1.72; 95% CI [1.01, 2.91]; $p < 0.05$).

According to Table 4.5, for education, Black men who received less than high school, is the established reference category. The odds of reporting household member substance misuse are 2.03 times higher for Black men, who received less than a high school education, at the time of the study compared to Black men, who completed high school or a GED (OR = 2.03; 95% CI [1.02, 4.00]; $p < 0.05$). Also, the odds of reporting childhood exposure to household member substance misuse are 3.12 times higher for Black men, who received less than a high school education, at the time of the study compared to Black men, who were college graduates (OR = 3.12; 95% CI [1.36, 7.09]; $p < 0.05$).

According to Table 4.5, for employment, Black men who were employed, at the time of the study, was the established reference category. The odds of reporting household member substance abuse are 1.84 times higher for Black men, who were unemployed, at the time of the study compared to Black men, who were employed (OR = 1.84; 95% CI [0.99, 3.38]; $p < 0.05$). Also, the odds of reporting household member substance abuse are 2.21 times higher for Black men, who were employed, at the time of the study, compared to Black men, who were retired (OR = 2.21; 95% CI [1.07, 4.54]; $p < 0.05$). According to Table 4.5, for health insurance, Black men who reported not having health coverage was the established reference category. The odds of reporting childhood exposure to household member substance misuse are 2.13 times higher for Black men who reported having health insurance, at the time of the study compared to Black men who did not report having health insurance (OR = 2.13; 95% CI [1.34, 3.35]; $p < 0.05$).

According to Table 4.5, for annual income, Black men earning less than or equal to $15,000 was the established reference category. In addition, the odds of reporting childhood exposure to household member substance misuse are 2.79 times higher for Black men, earning less than or equal to $15,000, at the time of the study compared to Black men, earning $25,000 to $34,999 (OR = 2.79; 95% CI [1.20, 6.45]; $p < 0.05$). Also, the odds of reporting childhood exposure to household member substance misuse are about twice higher for Black men, earning less than or equal to $15,000, at the time of the study compared to Black men, greater than or equal to $50,000 (OR = 1.99; 95% CI [1.05, 3.75]; $p < 0.05$). The remaining sociodemographic indicators were not statistically significant predictors in this model ($\alpha = 0.05$, $p > 0.05$).

Household Member Incarceration. Table 4.6 demonstrates the relationship between household member incarceration, age, marital status, education, employment, health insurance and annual income was statistically significant ($\alpha = 0.05$, $p < 0.05$).

Table 4.6

ACEs by Type Associated with Sociodemographic Factors

	HM[a] Incarceration		Divorce	
Characteristics	**OR (95% CI)**	***P*-value**	**OR (95% CI)**	***P*-value**
Age				
18-24	Ref		Ref	
25-34	0.54 (0.26-1.10)	.092	2.19 (1.10-4.38)	.026*
35-44	2.68 (1.27-5.68)	.010*	0.58 (0.29-1.14)	.117
45-54	3.20 (1.57-6.53)	.001*	2.35 (1.22-4.52)	.010*
55-64	4.85 (2.33-10.10)	.000*	4.29 (2.22-8.26)	.000*
65+	8.92 (3.71-21.73)	.000*	5.40 (2.71-10.75)	.000*
Marital Status				
Married	Ref		Ref	
Divorced	1.65 (0.89-3.06)	.111	1.13 (0.74-1.74)	.552
Separated	0.97 (0.32-2.90)	.964	2.89 (1.19-7.04)	.019*
Widowed	4.27 (2.13-8.54)	.000*	1.50 (0.82-2.75)	.187
Never Married	2.54 (1.55-4.17)	.000*	1.94 (1.37-2.76)	.000*
Education				

< High school	Ref		Ref	
High school or GED	2.20 (1.20-4.04)	.011*	0.67 (0.40-1.13)	.140
Some college or TS[b]	0.56 (0.30-1.04)	.067	1.03 (0.61-1.74)	.895
College graduate	2.73 (1.35-5.55)	.005*	0.67 (0.38-1.17)	.159
Employment				
Employed	Ref		Ref	
Unemployed	1.70 (0.98-2.94)	.058	1.14 (0.72-1.82)	.562
Retired	2.95 (1.50-5.81)	.002*	1.91 (1.28-2.87)	.002*
Unable to work	0.79 (0.43-1.47)	.470	0.63 (0.40-1.02)	.061
Health Insurance				
Has health insurance	1.92 (1.25-2.94)	.002*	1.41 (1.00-1.99)	.045*
Annual Income				
≤ $15,000	Ref		Ref	
$15,000-$24,999	0.77 (0.44-1.35)	.378	0.78 (0.48-1.27)	.327
$25,000-$34,999	5.68 (2.11-15.15)	.001*	1.02 (0.59-1.76)	.928
$35,000-$49,999	2.15 (1.04-4.44)	.038*	0.57 (0.32-1.02)	.061
≥ $50,000	2.61 (1.40-4.87)	.002*	1.05 (0.66-1.67)	.815

Note: OR = odds ratio; CI= confidence interval; HM[a] = Household Member; [b]TS = technical school; Reference category is "No" to having health insurance coverage.
* $p < .05$.

According to Table 4.6, for age, Black men age 18 to 24 is the established reference category. The odds of reporting household member incarceration are 2.68 times higher for Black men, age 18 to 24, compared to Black men, age 35 to 44 (OR = 2.68; 95% CI [1.27, 5.68]; $p < 0.05$). The odds of reporting childhood exposure to household member incarceration are 3.21 times higher for Black men, age 18 to 24, compared to Black men age 45 to 54 (OR = 3.21; 95% CI [1.57, 6.53]; $p < 0.05$). Additionally, the odds of reporting childhood exposure to household member incarceration are 4.85 times higher for Black men, age 18 to 24, compared to Black men age 55 to 64 (OR = 4.85; 95% CI [2.33, 10.10]; $p < 0.05$). Also, the odds of reporting childhood exposure to household member incarceration are 8.93 times higher for Black men, age 18 to 24, compared to Black men age 65 or older (OR = 8.93; 95% CI [3.71, 21.73]; $p < 0.05$).

According to Table 4.6, for marital status, Black men who were married, at the time of the study, is the established reference category. The odds of reporting household member incarceration are 4.27 times higher for Black men who were widowed, compared to married Black men (OR = 4.27; 95% CI [2.13, 8.54]; $p < 0.05$). Also, the odds of reporting household member incarceration are 2.54 times higher for Black men who were never married, compared to married Black men (OR = 2.54; 95% CI [1.55, 4.17]; $p < 0.05$).

According to Table 4.6, for education, Black men who received less than high school, is the established reference category. The odds of reporting household member incarceration are 2.21 times higher for Black men, who received less than a high school education, at the time of the study compared to Black men, who completed high school or a GED (OR = 2.21; 95% CI [1.20, 4.04]; $p < 0.05$). Also, the odds of reporting childhood exposure to household member incarceration are 2.74 times higher for Black men, who received less than a high school education, at the time of the study compared to Black men, who were college graduates (OR = 2.74; 95% CI [1.35, 5.55]; $p < 0.05$).

According to Table 4.6, for employment, Black men who were employed, at the time of the study, was the established reference category. The odds of reporting household member incarceration are 2.96 times higher for Black men, who were employed, compared to Black men, who were retired (OR = 2.96; 95% CI [1.50, 5.81]; $p < 0.05$). Additionally, the odds of reporting childhood exposure to household member incarceration are 1.93 times higher for Black men who reported having health insurance, at the time of the study compared to Black men who did not report having health insurance (OR = 1.93; 95% CI [1.25, 2.94]; $p < 0.05$).

According to Table 4.6, for annual income, Black men earning less than or equal to $15,000 was the established reference category. Indeed, the odds of reporting childhood

exposure to household member incarceration are 5.68 times higher for Black men, earning less than or equal to $15,000, at the time of the study compared to Black men, earning $25,000 to $34,999 (OR = 5.68; 95% CI [2.11, 15.15]; $p < 0.05$). The odds of reporting childhood exposure to household member incarceration are 2.15 times higher for Black men, earning less than or equal to $15,000, at the time of the study compared to Black men, $35,000 to $49,000 (OR = 2.15; 95% CI [1.04, 4.44]; $p < 0.05$). Additionally, the odds of reporting childhood exposure to household member incarceration are 2.62 times higher for Black men, earning less than or equal to $15,000, at the time of the study compared to Black men, greater than or equal to $50,000 (OR = 2.62; 95% CI [1.40, 4.87]; $p < 0.05$). The remaining sociodemographic indicators were not statistically significant predictors in the model ($\alpha = 0.05$, $p > 0.05$).

Divorce. Table 4.6 demonstrates the relationship between divorce, age, marital status, health insurance was statistically significant ($\alpha = 0.05$, $p < 0.05$). The odds of reporting divorce are 2.20 times higher for Black men, age 18 to 24, at the time of the study compared to Black men, age 25 to 34 (OR = 2.20; 95% CI [1.10, 4.38]; $p < 0.05$). The odds of reporting childhood exposure to divorce are 2.35 times higher for Black men, age 18 to 24, at the time of the study, compared to Black men age 45 to 54 (OR = 2.35; 95% CI [1.22, 4.52]; $p < 0.05$). Also, the odds of reporting childhood exposure to divorce are 4.29 times higher for Black men, age 18 to 24, at the time of the study, compared to Black men age 55 to 64 (OR = 4.29; 95% CI [2.22, 8.26]; $p < 0.05$). Additionally, the odds of reporting childhood exposure to divorce are 5.41 times higher for Black men, age 18 to 24, at the time of the study, compared to Black men age 65 or older (OR = 5.41; 95% CI [2.71, 10.75]; $p < 0.05$). The odds of reporting divorce are 2.89 times higher for Black men who were married, at the time of the study, compared to Black men who were separated (OR = 2.89; 95% CI [1.19, 7.04]; $p < 0.05$). Also, the odds of reporting divorce are

1.95 times higher for Black men who were never married, at the time of the study compared to married Black men (OR = 1.95; 95% CI [1.37, 2.76]; $p < 0.05$).

Additionally, the odds of reporting divorce are 1.92 times higher for Black men, who were employed, at the time of the study, compared to Black men, who were retired (OR = 1.92; 95% CI [1.28, 2.87]; $p < 0.05$). Indeed, the odds of reporting childhood exposure to divorce are 1.42 times higher for Black men who reported having health insurance, at the time of the study compared to Black men who did not report having health insurance (OR = 1.42; 95% CI [1.00, 1.99]; $p < 0.05$). According to Table 4.6, none of the remaining sociodemographic indicators were statistically significant predictors in this model ($\alpha = 0.05$, $p > 0.05$).

Domestic Violence. Table 4.7 demonstrates the relationship between domestic violence and employment was statistically significant ($\alpha = 0.05$, $p < 0.05$).

Table 4.7

ACEs by Type Associated with Sociodemographic Factors

	Domestic Violence	
Characteristics	**OR (95% CI)**	***P*-value**
Age		
18-24	Ref	
25-34	1.18 (0.50-2.76)	.697
35-44	1.66 (0.72-3.81)	.227
45-54	1.43 (0.64-3.19)	.378
55-64	1.08 (0.48-2.40)	.850
65+	0.66 (0.28-1.56)	.350
Marital Status		
Married	Ref	
Divorced	1.29 (0.79-2.10)	.301
Separated	.657 (0.26-1.61)	.361
Widowed	1.83 (0.96-3.49)	.063
Never Married	1.06 (0.69-1.62)	.772
Education		
< High school	Ref	
High school or GED	0.90 (0.48-1.68)	.748

Some college or TS[b]	1.07 (0.57-2.00)	.825
College graduate	1.10 (0.57-2.13)	.773
Employment		
Employed	Ref	
Unemployed	1.16 (0.69-1.97)	.565
Retired	2.12 (1.31-3.73)	.003*
Unable to work	1.04 (0.63-1.73)	.860
Health Insurance		
Has health insurance	1.16 (0.77-1.74)	.466
Annual Income		
≤ $15,000	Ref	
$15,000-$24,999	1.01 (0.57-1.76)	.967
$25,000-$34,999	0.82 (0.42-1.60)	.579
$35,000-$49,999	1.02 (0.54-1.94)	.934
≥ $50,000	1.01 (0.58-1.74)	.972

Note: OR = odds ratio; CI= confidence interval; HM[a] = Household Member; [b]TS = technical school; Reference category is "No" to having health insurance coverage.
* $p < .05$.

According to Table 4.7, the odds of reporting domestic violence are 2.12 times higher for Black men, who were employed, at the time of the study compared to Black men, who were retired (OR = 2.12; 95% CI [1.31, 3.73]; $p < 0.05$). According to Table 4.7, the remaining sociodemographic indicators were not statistically significant predictors in this model ($\alpha = 0.05$, $p > 0.05$).

***RQ 5**. Do health risk behaviors mediate the impact of ACES on depression among Black Men?*

This research question, using logistic regression, was to determine if the independent variables (e.g., smoking behaviors, drinking behaviors, sexual risk behaviors) and ACE presence (e.g. by number) have a statistically significant relationship with the dependent variable (current and lifetime diagnosis of) depression. The outcome variable of interest for this research question was depression.

ACE Presence and Current Depression. Table 4.8 displays comparisons made, controlling for sociodemographic factors, between the six types of designations for nonpresence or presence of ACEs, using the first category as the reference and the dependent variable current depression. The Nagelkerke R value was .0170, which meant the model accounted for 17% of the variance explained in current depression. According to Hosmer and Lemeshow's Goodness-of-fit statistic, this model was a good fit (p = .510) and more than the alpha level (α= 0.05).

Black men who experienced 3 ACEs, before 18, were 2.60 times more likely to report current depression compared to Black men who reported no exposure to ACEs (OR = 2.60; 95% CI [1.25, 5.38]; $p < 0.05$). Black men who experienced 4 ACEs, before 18, were four times more likely to report current depression compared to Black men who reported no exposure to ACEs (OR = 4.00; 95% CI [1.66, 9.164]; $p < 0.05$). Also, Black men who experienced 5 or more ACEs during childhood were 3.21 times more likely to report current depression compared to Black men who reported no exposure to ACEs (OR=3.21; 95% CI [1.45, 7.07]; $p < 0.05$). According to Table 4.8, Black men who reported experiencing 1 ACE (p =.689); and 2 ACEs (p = .218), before 18, were not statistically significant predictors of current depression (α= 0.05, $p > 0.05$).

Table 4.8

Logistic Regression of ACE Presence by Number and Current Depression

Characteristics	**OR (95% CI)**	***P*-value**
Number of ACEs		
ACE = 0	Ref	
ACE = 1	0.88 (0.48-1.61)	.689
ACE = 2	1.52 (0.77-2.97)	.218
ACE = 3	2.60 (1.25-5.38)	.010*
ACE = 4	4.00 (1.66-9.64)	.002*
ACE = ≥ 5	3.20 (1.45-7.07)	.004*

Note: OR = odds ratio; CI= confidence interval;
* p < .05.

Health Risk Behaviors and Current Depression. Comparisons were made, controlling for sociodemographic factors, between current depression and health risk behaviors. The Nagelkerke R value was .0156, which meant the model accounted for 15.6% of the variance explained in current depression. According to Hosmer and Lemeshow's Goodness-of-fit statistic, this model was a good fit to the data, given that the predicted values were not significantly different than true cases (p = .832) and more than the alpha level (α= 0.05). The first category was utilized as a reference for smoking and sexual risk behavior and the last category for binge drinking. The health risk behaviors, smoking behavior (p = .261), binge drinking (p = .657), and sexual risk behavior (p = .492), were not significant upon their inclusion in the model.

ACE Presence, Health Risk Behaviors and Current Depression.

Comparisons were made, controlling for sociodemographic factors, between current depression, health risk behaviors and the six types of designations for nonpresence or presence of ACEs, using the first category as the reference. The Nagelkerke R value was .341, which meant the model accounted for 34.1% of the variance explained in current depression. According to Hosmer and Lemeshow's Goodness-of-fit statistic, this model was a good fit to the data, given that the predicted values were not significantly different than true cases (p = .347) and more than the alpha level (α= 0.05).

Pertaining to the exploration of health risk behaviors as mediators, a logistic regression analysis was employed to examine the significance of each beta weight as a measure of possible mediated effects. While only testing the dichotomous outcome, current depression, two variables were significant (e.g., the reporting of 4 ACEs and more than 5 ACEs). After entering the health risk behaviors into the model, controlling for sociodemographic factors, the beta weight significance of the two ACE variables changed to non-significant. However, the significance of

the beta weight for the health risk behaviors, smoking behavior (p = .982), binge drinking (p = .265), and sexual risk behavior (p = .338), were not significant upon their inclusion in the model. Overall, none of the remaining ACE related predictors were significant. Thus, the assumptions for a mediation were not met. It appears health risk behaviors do not mediate the impact of ACEs on current depression among Black men.

ACE Presence and Lifetime Diagnosis of Depression. Table 4.9 displays comparisons made, controlling for sociodemographic factors, between the six types of designations for nonpresence or presence of ACEs, using the first category as the reference and the dependent variable lifetime diagnosis of depression. The Nagelkerke R value was .299, which meant the model accounted for 29.9% of the variance explained in lifetime diagnosis of depression. According to Hosmer and Lemeshow's Goodness-of-fit statistic, this model was a good fit to the data, given that the predicted values were not significantly different than true cases (p = .129) and more than the alpha level (α= 0.05). Black men who experienced 3 ACEs, before 18, were 3.42 times more likely to report lifetime diagnosis of depression compared to those who reported no exposure to ACEs (OR = 3.42; 95% CI [1.28, 9.10]; $p < 0.05$).

Also, Black men who experienced 4 ACEs, before 18, were 5.14 times more likely to report lifetime diagnosis of depression compared to those who reported no exposure to ACEs (OR = 5.14; 95% CI [1.54, 17.18]; $p < 0.05$). Additionally, Black men who experienced 5 or more ACEs, before 18, were 6.06 times more likely to report lifetime diagnosis of depression compared to those who reported no exposure to ACEs (OR = 6.06; 95% CI [2.09, 17.46]; p <0.05). According to Table 4.9, Black men who reported experiencing 1 ACE (p =.667); and 2 ACEs (p = .056); before 18, were not statistically significant predictors of lifetime diagnosis of depression in this model (α= 0.05, $p > 0.05$).

Table 4.9

Logistic Regression of ACE Presence by Number and Lifetime Diagnosis of Depression

Characteristics	**OR (95% CI)**	***P*-value**
Number of ACEs		
ACE = 0	Ref	
ACE = 1	1.19 (0.52-2.71)	.667
ACE = 2	2.41 (0.97-5.94)	.056
ACE = 3	3.41 (1.28-9.10)	.014*
ACE = 4	5.14 (1.54-17.18)	.008*
ACE = ≥ 5	6.05 (2.09-17.46)	.001*

Note: OR = odds ratio; CI= confidence interval;
* p < .05.

Health Risk Behaviors and Lifetime Diagnosis of Depression. Comparisons were made, controlling for sociodemographic factors, between lifetime diagnosis of depression and health risk behaviors. The first category was utilized as a reference for smoking and sexual risk behavior and the last category for binge drinking. The Nagelkerke R value was .496, which meant the model accounted for 15.6% of the variance explained in current depression. According to Hosmer and Lemeshow's Goodness-of-fit statistic, this model was a good fit to the data, given that the predicted values were not significantly different than true cases (p = .192) and more than the alpha level (α= 0.05). The health risk behaviors, smoking behavior (p = .151), binge drinking (p = .782), and sexual risk behavior (p = .331), were not significant upon their inclusion in the model.

ACE Presence, Health Risk Behaviors and Lifetime Diagnosis of Depression.

Comparisons were made, controlling for sociodemographic factors, between lifetime diagnosis of depression, health risk behaviors and the six types of designations for nonpresence or presence of ACEs. The Nagelkerke R value was .605, which meant the model accounted for 60.5% of the variance explained in lifetime diagnosis of depression. The first category was

utilized as a reference for smoking and sexual risk behavior and the last category for binge drinking. Pertaining to the exploration of health risk behaviors as mediators, a logistic regression analysis was employed to examine the significance of each beta weight as a measure of possible mediated effects. While only testing the dichotomous outcome, lifetime diagnosis of depression, three variables were significant (e.g., the reporting of 3 ACES, 4 ACES and more than 5 ACEs). After entering the health risk behaviors into the model (e.g., smoking, binge drinking, and sexual risk behaviors), controlling for sociodemographic factors, the beta weight significance of the three significant ACE variables changed to non-significant.

However, the significance of the beta weights for the health risk behaviors, smoking behavior (p = .259), binge drinking (p = .705), and sexual risk behavior (p = .713), were not significant upon their inclusion in the model. Overall, none of the remaining ACE related predictors were significant. Thus, the assumptions for a mediation were not met. It appears health risk behaviors do not mediate the impact of ACEs on lifetime diagnosis of depression among Black men.

Meaningfully Significant Predictors

Meaningful significant predictors of both current and lifetime diagnosis of depression include Black men experiencing early exposure to physical abuse, verbal abuse, household member incarceration and divorce, before age 18. Additionally, Black men who experienced 5 or more ACEs during childhood were 3.21 times more likely to report current depression compared to Black men who reported no exposure to ACEs (OR=3.21; 95% CI [1.45, 7.07]; $p < 0.05$). Furthermore, Black men who experienced 5 or more ACEs, before 18, were 6.06 times more likely to report lifetime diagnosis of depression compared to those who reported no exposure to ACEs (OR = 6.06; 95% CI [2.09, 17.46]; $p < 0.05$).

The overall relationship between physical abuse, a direct ACE, and stroke was statistically significant ($\alpha = 0.05$, $p < 0.05$). Black men who reported a stroke diagnosis were 4.14 times more likely to report experiencing physical abuse, before age 18, compared to Black men who did not report a stroke diagnosis (OR = 4.14; 95% CI [1.69, 10.12]; $p < 0.05$). The remaining chronic medical conditions, heart disease ($p = .690$) and diabetes ($p = .804$), were not statistically significant predictors of physical abuse in the regression model ($\alpha = 0.05$, $p > 0.05$). Furthermore, aside from physical abuse, additional analysis revealed none of the remaining chronic medical conditions had a significant relationship to any other direct or environmental ACE among Black men. Pertaining to the sociodemographic factors explored in the study, household member substance misuse and household member incarceration were found to have a statistically significant relationship with all six factors (e.g., age, marital status, education, employment status, health insurance, annual income).

CHAPTER 5

DISCUSSION

In the U.S., Black men face a disproportionate burden of preventable mortality and morbidity rates (Brown et al., 2009; CDC, 2010a; Kelly-Irving et al., 2013). Among the possible factors associated with the disproportionality in rates among Black men, studies suggest, are adverse childhood experiences (ACEs) (Felitti et al., 1998; Metzler et al., 2017; Williams 2003; Watkins 2012; Watkins, Walker, & Griffith, 2010). Moreover, depression, one of the world's most pervasive psychiatric disorders, researchers suggest, also attribute to disparate rates in mortality and morbidity among Black men (Brown et al., 2009; CDC, 2010a; Kelly-Irving et al., 2013). However, the relationship between ACEs, health behavioral risks, chronic medical conditions and depression has not been studied before using the Bowen Family Systems theory as the theoretical backdrop to explore emotional determinants of health. Indeed, the original ACE study examined the general impact of ACE exposure on later chronic medical conditions (Felitti et al., 1998) , and did not focus on categorizing ACEs along with examining possible mediating health risk behaviors while specifically exploring current and lifetime diagnosis of depression among Black men.

Therefore, the purpose of this study and research inquiry was to describe the relationship between differential exposure to ACEs and depression in Black men, controlling for effects of social demographic factors, presence of chronic medical conditions and health behavioral risks using 2012 Behavioral Risk Factor Surveillance System (BRFSS) data.

Discussion of Findings

Prevalence of ACEs among Black men

This study resulted in a sample of 3,084 black men. Most (about 68%) reported experiencing one or more ACEs before age 18. This compares to 51.7% in previous research (Bynum et al., 2010). Approximately 32.1% of Black men reported early exposure to verbal abuse, the most common direct ACE. This compares to 16.0% in previous research (Bynum et al., 2010). In contrast, a larger proportion of Black men reported being exposed to divorce, before the age 18, (48.6%), the most common environmental ACE. This compares to 37.9% in previous research (Bynum et al., 2010). The differences in the prevalence estimates might be due to the limitations of the previous BRFSS research (Bynum et al., 2010). For example, the prevalence of ACEs may be undercounted due to the BRFSS excluding persons who might have experienced ACEs disproportionately, particularly Black men (Bynum et al., 2010). Also, the previous study's BRFSS response rates were considered low, specifically for Black men, which increases the risk for response bias (Bynum et al., 2010). The findings also suggest that direct and environmental ACEs are most common across sociodemographic factors, which is comparable to findings quantifying ACE exposure across sociodemographics (Merrick et al., 2018).

Relationship between ACEs and depression among Black Men

Depression and ACEs, among Black men in this study, demonstrated a significant relationship even when controlling for sociodemographic factors. Specifically, in the present study, physical abuse, a direct ACE, was associated with current depression among Black men. This is consistent with previous findings that physical abuse, before age 18, can have a detrimental impact on an individual's social, cognitive, and emotional well-being with several

studies showing its effect persists into adulthood (Dumont & Czaja, 2007; Perez & Widom, 1994; Sperry & Widom, 2013).

Research shows that constantly hitting a child releases a biochemical response to stress that can lay the groundwork for suicide, negative emotions, and depression in adulthood (Hyland, Alkhalaf, & Whalley, 2013). Additionally, longitudinal studies demonstrate that children with childhood abuse histories are more likely to experience symptoms of depression and experience the criminal justice system compared to those with no history of abuse (Allwood & Widom, 2013; Fergusson, Boden, & Horwood, 2008; Lansford et al., 2002; Luntz & Widom, 1994; Perez & Widom, 1994; Sperry & Widom, 2013).

The study revealed a relationship between verbal abuse and lifetime diagnosis of depression. This is consistent with previous findings that verbal abuse, before age 18, has prolonged consequences over any other form of abuse (Teicher, Samson, Polcari, & McGreenery, 2006; Vissing, Straus, Gelles, & Harrop, 1991). According to Brendgen, Wanner, & Vitaro (2006), verbal abuse is part of psychological abuse or what some researchers refer to as emotional abuse due to the adverse impact verbal abuse has on the emotional well-being of the person. However, verbal abuse is not as easily recognizable or defined as physical abuse. It is also difficult to gauge the impact that verbal abuse has on its sufferers yet is much more common than physical abuse (Bennetts, 2006; Hutchinson & Mueller, 2008).

Household member incarceration, an environmental ACE, revealed a statistically significant relationship to current depression. This is consistent with previous findings that suggests that the net effect of incarceration on children's social emotional health and future development is harmful (Wakefield & Wildeman, 2011). In this study, household member incarceration was found to have a statistically significant relationship with all six

sociodemographic factors (e.g., age, marital status, education, employment status, health insurance, annual income). Incarceration, a disruptive life event is typically experienced disproportionately by young Hispanic and Black men, contributing to experiences of health disparities throughout the U.S (Sabol, West, & Cooper, 2009; Tables, 2010; Fellner, 2009). \

Additionally, divorce, an environmental ACE, revealed a statistically significant relationship to lifetime diagnosis of depression. This is consistent with previous findings that suggests the impact of divorce is associated with increased emotional strain in a child's life (Felitti et al., 1998; Shonkoff, Boyce, & McEwen, 2009). Researchers agree (Felitti et al., 1998; Shonkoff, Boyce, & McEwen, 2009) children's prolonged exposure to the adverse impacts of divorce is associated with high levels of toxic stress. The heightened focus on the divorce makes it difficult for the parent to focus on the needs of their children, leaving children feeling scared, powerless, insecure and abandoned (Hetherington & Arasteh, 2014; Wallerstein & Lewis, 1998) all factors that may negatively impact mental health.

Relationship between chronic medical conditions and ACEs among Black men

This study demonstrated an overall relationship between physical abuse, a direct ACE, and stroke. This is consistent with previous findings that respondents who experienced early exposure to ACEs had higher risks for chronic medical conditions like stroke, compared to those who reported no ACEs (Felitti et al., 1998). Despite, previous research demonstrating a strong relationship between the number of ACEs and other adverse health-related outcomes (e.g., diagnosis of heart disease and diabetes) in adulthood (Felitti et al., 1998), this study yielded comparable findings related to stroke, only. This difference might be due to the limitations of previous research (Bynum et al., 2010) and the secondary data utilized in this study (CDC & BRFSS, 2013b). For example, the data from previous research and the secondary data utilized in

this analysis included those respondents who were surveyed regarding past events that happened before the age of 18, which could have presented recall bias in the results. Additionally, because this survey was carried out over the phone, Black men might give socially acceptable responses regarding varying types diagnosis before age 18 (Bynum et al., 2010; CDC & BRFSS, 2013b).

Sociodemographic factors associated with the ACEs among Black Men

Household member substance misuse had a statistically significant relationship with all six sociodemographics (e.g., age, marital status, education, employment status, health insurance, annual income). This finding is consistent with previous research that reveals almost 30% of children in the US grow up with a household member living with a substance use disorder (CDC, 2010). The sociodemographic make-up of these children's families differs across a variety of factors (CDC, 2010). Indeed, children growing up with parents who have substance use disorders are at heightened risk for being exposed to other adversities, such as physical, verbal, or sexual abuse (Sheridan, 1995, Wolock & Magura, 1996). This co-occurrence of different types of adversity are major risk factors for future mental health challenges well into adulthood (De et al., 2013).

Also, household member incarceration had a statistically significant relationship with all six sociodemographic factors (e.g., age, marital status, education, employment status, health insurance, annual income). Incarceration, a disruptive life event is typically experienced disproportionately by young Black males, contributing to experiences of health disparities throughout the U.S (Sabol, West, & Cooper, 2009; Tables, 2010; Fellner, 2009). A study examining a 1990 birth cohort revealed that while White children showed a 3.6–4.4% cumulative risk of experiencing the incarceration of a parental figure by 14 years of age, Black children had a 25–28% cumulative risk, that was part of the same cohort (Wildeman, 2009).

Moreover, the high rise in rates of incarceration rates in the 1980s suggests that numbers of children with an incarcerated family member have increased dramatically over the past three decades (Wildeman, 2009). Population health datasets very rarely include the history of incarceration, making it a challenge to measure the relationship between health outcomes, incarceration, health risk behaviors, health disparities, and sociodemographics (Ahalt, Binswanger, Steinman, Tulsky, & Williams, 2012; Wang, E. A., & Wildeman, 2011). However, the evidence presented in this study contributes to public health research demonstrating a statistically significant relationship between household member incarceration across a variety of sociodemographic factors related to Black men.

Health risk behaviors, ACES, and depression among Black men

One major finding in our study was that none of the health risk behaviors (smoking, binge drinking, sexual risk behaviors) mediate current or lifetime diagnosis of depression in Black men. Although, previous research demonstrates associations between ACEs and health risk behaviors such as heavy drinking (Dube, Felitti, Dong, Giles, & Anda, 2003; Rothman et al., 2008; Shin, Edwards, & Heeren, 2009), smoking (Annerbäck, Sahlqvist, Svedin, Wingren, Gustafsson, 2012; Edwards, Anda, Gu, Dube, & Felitti, 2007; Ford et al., 2011; Moran, Vuchinich, & Hall, 2004), and sexual risk behaviors (Bensley, Van Eenwyk, & Simmons, 2000; Dube et al., 2003; Felitti et al., 1998), all practices that can impact mental health negatively.

In summary, the current study contributes to the literature by providing valuable insights regarding the influential impact of ACEs on depression among Black men. Findings of this study provide new information on various factors and influences to consider from both the Bowen Family Systems perspective and the emotional determinants of health explanatory context and organizing framework (EDOH).

Bowen Family System Theory

Generally, family systems theory aims to explain the interconnectedness of individual family members and family subsystems to better understand how their shared history, familial bonds, and collaborative coping strategies support the family's functioning. The BFS theory, specifically, helps frame how family-level risk and protective factors impede or support their ability to perform essential family functions, such as nurturance, protection, stability, and cohesion (Brodsky, 1999; Patterson, 1991). Bowen proposed that a family is an emotional system that leads to growth and development and influences the overall conduct of its members (Bavelas & Segal, 1982; Broderick, 1993; Kerr & Bowen, 1988). The concepts found in BFS theory, highlight the family structure and help explain generational transmission of emotional experiences, behaviors, and possible mental health challenges, namely depression, in relation to family and individual quality of life (MacKay, 2012; Nichols et al., 2004). Through this framework, and the subsequent findings of this study, we found that childhood trauma is associated with both current and lifetime depression in Black men.

The findings of this study are consistent with previous literature related to the use of BFS theory to understand the relationship between childhood adversity on later adult manifestations of childhood trauma (Margolin et al., 2003). The findings from this study demonstrate the predictive nature of the BFS theory to specifically forecast adult and family mental health outcomes by considering the impact of early familial relationships (Bing, 2011; Conradi, Gerlsma, van Duijn, & Jonge, 2006; Foran, Whisman, & Beach, 2015; La Greca & Harrison, 2005; Priest, 2015; Sibley, Fischer, & Liu, 2005; Whisman & Baucom, 2012).

Emotional Determinants of Health (EDOH)

Due to early adversity, Black men may be at higher risk for negative health outcomes over their lifetime (Blumberg et al., 2016; Dallas & Burton, 2004; Miller & Bennett, 2011; Ports et al., 2017; Watkins & Griffith, 2013). Though researchers agree, to capture a precise picture of vulnerabilities and effectively address negative health outcomes and health disparities among Black men, context is a significant factor. For this study, we examined ACEs through the framework of the Bowen Family Systems (BFS) theory while also exploring the nuanced explanatory context of EDOH.

Indeed, to adequately respond to unique vulnerabilities Black men face, researchers suggest, public health educators aim to mitigate the myths of behavioral explanations founded on racial stereotypes, territorial stigmatization, and race-based biology. Furthermore, researchers recommend that efforts to address health disparities must consider the context of material resource scarcity caused by low socioeconomic status, toxic stress brought on by experiences of racial discrimination, or alternate types of place-based risk (Chowkwanyun & Reed, 2020). Health issues that persist on an individual level and even familial level, when intentionally explored through an explanatory context, can offer helpful understandings in addressing health disparities.

EDOH are impacted chiefly by political determinants of health or the wider set of forces and systems or structural processes shaping the conditions of daily life (Dawes, 2020) and are inextricably linked to social determinants of health (e.g., conditions in which people are born, grow, work, live, and age) existing as mutually emotional health reinforcing or influencing, interrelated, non-familial or familial relationships across varying multi-dimensional levels of influence that may affect emotional health (Plough, 2017).

The EDOH organizing structure, for this study, was viewable in conjunction with the familial lens of the Bowen Family Systems Theory, consisting of five key areas or multi-dimensional levels of influence that can positively or negatively impact emotional health: (1) intrapersonal relationships, (2) interpersonal relationships, (3) contextual relationships, (4) multi-generational relationships, (5) societal relationships. EDOH help frame how essential family functions, such as nurturance, protection, stability, and cohesion can look differently among families, impacted by structural factors, and places subsequent impacts on mental health.

The findings of this study reveal how adverse childhood experiences, when viewed through the EDOH organizing structure, help explain how current and later emotional health can be positively or negatively impacted by the interactions of each familial or non-familial relationship. Though, it is critical to note that the larger structural forces or PDOH, can lessen or heighten both positive and negative mental health impacts (Dawes, 2020). Additionally, this explanatory context has the potential to inspire men to seek better understandings around early adverse childhood experiences and the mental health impact of relationships, familial or non-familial.

Limitations

There exist several limitations for this current study. As with the use of any theory, there are also limitations inherent to the BFS theory and the EDOH explanatory context and organizing framework of relationships. For example, it is impossible to cover every facet that affects child development and later adult physical and mental health outcomes, so the BFS concepts that characterize familial interaction and the levels of relationships are limited by the theorists' conceptualizations (Kerr & Bowen, 1988). Though the findings from this study demonstrate the predictive nature of the BFS theory to specifically forecast adult and family

mental health outcomes, the theory operates under the assumption that chronic anxiety is the chief concern across familial relationships (Kerr & Bowen, 1988). While evidence suggest anxiety, a mental health challenge, can impact a variety of child and adult outcomes, the theory does not go beyond the theorists' view of family as an emotional unit tasked with navigating anxiety, and its impact on familial interactions (Kerr & Bowen, 1988). Despite this limitation, successful use of the theory in research related to ACEs in explaining the multigenerational transmission of trauma justified its use in the present study (Caffaro, 2013; Fingerman & Bermann, 2000; Goodell & Hanson, 1999; MacKay, 2012).

A limitation to generalizability is inherent due to this study covering only two states, and the results are not generalizable to the entire U.S. adult population. The previous research inquiry was cross-sectional in nature, including in design the collection of recall bias, self-reported responses, question bias, possible omission of important factors outside the theoretical framework that could influence depression and social desirability bias (CDC & BRFSS, 2013b). This study utilized data from the 2012 BRFSS, which may not reflect the current extent of ACE exposure and depression use among Black men in the U.S. The BRFSS does not describe cause and effect due to its cross-sectional design, which meant causal associations could not be made between the outcomes and predictors (CDC & BRFSS, 2013b). Also, the items in the BRFSS were not created with all the ACEs related variables from the original study (e.g., neglect was excluded from the optional module) in mind and the survey items were not content validated (CDC & BRFSS, 2013c).

Furthermore, respondents were surveyed regarding past events that happened before the age of 18, which could have presented recall bias in the results. Additionally, because this survey was carried out over the phone, Black men might give socially acceptable responses regarding

varying types of behaviors or diagnosis before age 18. Social desirability occurs when a respondent undergoing a survey reports a behavior or provides an answer to a question or that is advantageous to the interviewee (Thompson & Phua, 2005). Additional sensitive topics that can lead to social desirability bias include alcohol and smoking behaviors, mental health status, or personal income (Krumpal, 2013). Further bias may be in the form of question bias, resulting from problems in the legitimacy of a measure (Furnham, 1986). The way in which questions were phrased, in the previous study, is a limitation because respondents may not understand the phrase or terminology presented in the BRFSS questionnaire (CDC & BRFSS, 2013b). Lastly, the benefit to conducting cross-sectional studies is utilizing a highly cost-effective method for analyzing large samples of data in a short period of time (McKenzie, Neiger, & Thackeray, 2012).

Strengths of the Study

Despite the limitations of the study, several strengths also exist, including a large sample size of Black men, solid sampling methods, and weighting of response data. The BRFSS was able to gather a large amount of data from Black men specifically in North Carolina and Tennessee due to longstanding collaborative relationship between the Centers of Disease Control (CDC) and the respective state health departments.

The BRFSS, offers nationally representative estimates on behaviors of significant health risk, preventive health practice approaches, and health care access primarily related to chronic disease and injury among the civilian non-institutionalized household population in the United States (CDC & BRFSS, 2013b). Each dataset can be used to examine access to care and disease burden individuals are currently experiencing in the U.S. (CDC & BRFSS, 2013b). In terms of sample design, while conducting the U.S. BRFSS, in the form of a telephone survey, a sample

report is a single phone number among the list of the telephone records for the purpose of a call. Sample records must be legitimate probability samples of each household, with telephones, to meet the standards set forth by the US BRFSS.

According to the BRFSS overview, all states participating in the 2012 system met this standard. Among the projects participating, fifty-one of them utilized a disproportionate stratified sample (DSS) design and Guam, and Puerto Rico employed a simple random sample study procedure. DDS design in the 2012 BRFSS, helps situate landline telephone numbers in the process of being divided among two groups, or strata, to be sampled individually. Based on whether the strata were high or medium density helped determine which landline numbers belong primarily to homes.

As a result, numbers listed, that were household numbers, were examined by block, then, numbers that developed from these blocks with one or more home telephone numbers in their respective high or medium-density grouping were included. Then, the two groups are tested to achieve a probability sample of all homes with phones. Cell phone sampling is available, and its use is typically at random during the data collection process. In the sample design, each state begins with a single stratum, sampling disproportionately. This sampling included 48 states. Data included in analysis from any state may be collected directly by the state's health department or through a contractor.

Additionally, in 2012, the CDC's BRFSS' Branch contributed samples acquired from Marketing Systems Group, Inc. (MSG) to each of the states and territories (CDC & BRFSS, 2013b). For the purpose of this study, the current sample met the following criteria: (1) adult men who were 18 years of age or older; (2) self-identified as Black; (3) reported their marital status, educational attainment, employment status, health insurance coverage, household income;

(4) childhood exposure to ACEs; (5) chronic medical condition status; (6) mental health status; and (7) involvement in health risk behaviors.

Lastly, a significant strength of the current study is that the BRFSS data continues the use of a weighting method first introduced in 2011. In the 2012 BRFSS, the weighting methodology is made up of a process called raking or "iterative proportional fitting" (CDC & BRFSS, 2013b) to adjust for differences in demographics among those sampled individuals and the population from which they represent. The purpose of raking is to adjust data so varying groups who are commonly underrepresented can be more accurately represented for the final set of data (CDC & BRFSS, 2013b). Furthermore, historically, the use of raking can reduce nonresponse bias and has been associated with reduction in errors within estimates.

Implications for Practice from a SEM perspective

The findings of this study further speak to the significance surrounding the roles and responsibilities of health educators in delivering health education concerning behaviors that promote wellness and overall health, assess needs, capacities, and assets of a target population to efficiently implement approaches to improve health, (Society of Public Health Education [SOPHE], 2018). Certified health education specialist (CHES) are paramount to furthering the awareness of the findings in this study as health professionals who hold the necessary academic training, expertise, and health promoting specific competencies to do so (National Commission for Health Education Credentialing [NCHEC], 2018). Among the eight areas of responsibility, the eighth area states, health educators must serve as an authoritative resource on health education and promotion whereby individuals provide expert consultation, guidance, assistance to groups, individuals and organizations related to specific health issues (Knowlden et al., 2020).

The findings of this study would contribute to the health field particularly as health educators engage strategies to disseminate the findings in appropriate settings (NCHEC, 2018).

It is impossible to cover every facet that relates to direct and environmental ACEs and depression among Black men by only viewing the associations from a familial perspective. Based on previous research, equity, and race/racial equity approaches, other theoretical viewpoints are encouraged to be explored (Burrows, 2004; CAPD, 2019 Caruth, 2016; Di Prete, 2005; Dominick, 2001; Edkins, 2003; Felman & Laub, 1992; Schreiber, 2010). Due, in part, to the limitations of the theorists' conceptualization of the Bowen Family System theory, the nascent emergent use of the EDOH organizing framework, a historically used health education model will be enlisted to explore health education and promotion practice recommendations.

Thus, the following practice recommendations will be based on the Social Ecological Model (SEM). The SEM serves to direct attention to both behavior and its individual and environmental determinants (McLeroy, Bibeau, Steckler, & Glanz, 1988). Kenneth R. McLeroy, Ph.D. and Daniel Bibeau, Ph.D. from the Department of Public Health Education at the University of North Carolina, Greensboro, developed the SEM. The SEM was viewed as being affected by, and effecting, multiple levels of influence particularly on behavior (Glanz & Rimer, 2005). In the SEM, the outcome of interest is patterned behavior, and behavior is viewed as being determined by intrapersonal factors, interpersonal processes, institutional factors, community factors and public policy (Glanz & Rimer, 2005).

The intrapersonal level of influence utilizes individual characteristics such as attitude, knowledge, and beliefs to influence behavior change. The interpersonal level of influence utilizes family and friendships that provide support and identity to influence behavior. On the institutional or organizational level social institutions are utilized to influence behavior. On the

community level relationships among organizations and informal networks influence behavior. On the final level, public policy, local, state, and federal policies, and laws are integrated to influence behavior (McLeroy, Bibeau, Steckler, & Glanz, 1988). ACEs and the harms associated with these kinds of experiences are preventable (CDC, 2019b). Research shows, safe, nurturing, stable environments for all children and families can prevent early exposure to adverse experiences (CDC, 2019b; Fortson et al., 2016). The results from this study revealed how Black men reported experiencing a mix of both direct and environmental ACEs. The results also revealed a significant relationship between physical abuse and household member incarceration and current depression. Indeed, verbal abuse and divorce was associated with lifetime diagnosis of depression. The findings highlight a need to explore asset-based strategies for Black families to ensure a strong start for Black boys.

The evidence from this study confirms the need for recommendations to achieve and maintain significant reductions in ACE risk factors and outcomes. Thus, the following recommendations, utilizing the SEM, may help communities and states formulate prevention strategies that result in impact. The recommendations can be accomplished through practice, programming, and policies to help change environments, norms, and behaviors. In agreement with the CDC, with slight modifications to the relevance of this study, the following recommendations are offered to mitigate the harms or prevent ACEs from happening among Black families:

Individual level

Based on the individual factors in the SEM, findings from this study has implications for health education efforts to increase awareness and knowledge about the harms of child physical and verbal abuse on the mental health of Black men. Research suggest that verbal abuse is not as

easily recognizable or defined as physical abuse. It is also difficult to gauge the impact that verbal abuse has on its sufferers yet is much more common than physical abuse (Bennetts, 2006; Hutchinson & Mueller, 2008). Challenges exist in addressing verbal abuse, though research shows this kind of abuse happens in tandem with physical abuse (Elliot & Urquiza, 2006). Thus, physical abuse, with attention to verbal abuse, could be addressed in public health education to reduce depression prevalence, make improvements in treatment, strengthen efforts in health disparities reduction among Black men. This is consistent with Healthy People 2020 objectives of both improving mental health through prevention and reducing childhood exposure to abuse (HHS ODPHP, 2015; HHS ODPHP, 2017).

Research shows public education to adjust knowledge and awareness about the impact of violent behaviors and adverse experiences can help prevent ACEs (Basile et al., 2016; David-Ferdon et al., 2016; Fortson et al., 2016; Niolon et al., 2017; Stone et al., 2017). For example, the findings of this study suggest employing public health education strategies that aid in fostering openness and the exchange of knowledge about Black masculinity, reimagining the Strong Black Man ideology, and the impact of abuse toward young children (Fortson et al., 2016). Health educators' efforts can help reduce stigma around mental health and support healthy relationship behaviors that strengthen self-efficacy in Black individuals to understand the roots of and protect against violent or toxic behaviors toward peers, future children or partners (Basile et al., 2016; Curry, 2017; Niolon et al., 2017).

Interpersonal level

At the interpersonal level, health education programs should strengthen efforts in educating young Black men on the positive benefits of connecting to caring adults or mentors. Relationships with adults, who are positive role models, can prevent adverse childhood

experiences and improve future physical and mental health outcomes for youth (David-Ferdon et al., 2016). Research shows connecting young adults to caring mentors can help build self-esteem, establish positive experiences and networks, and improve engagement in education endeavors (Basile et al., 2016; David-Ferdon et al., 2016).

Mentoring has been shown to strengthen leadership, behavioral and academic skills and can connect youth to other caring adults and mental health promoting activities (Basile et al., 2016; David-Ferdon et al., 2016). As a result, mentoring can act as a buffer or preventive strategy against the impact of household member incarceration, divorce, or other possible adverse experiences in the home (CDC, 2019b). Thus, health education programs should serve as a hub for referrals to mentorship programs for Black men or after-school programs to help support emotional well-being. The efforts would not only raise awareness with and target their parents but aid in reaching other family members who are residing in the same household. Family engagement is a crucial facet in health promotion and education efforts (Birch, 1996; Middleton & Cortese, 1994).

Institutional level

At the institutional level, health educators can help reinforce positive messaging within worksites, schools, churches, or other institutions to help ensure a strong start for Black children. Research shows, children's relationships with others outside or inside the family unit plays a role in healthy brain development (David-Ferdon et al., 2016; Fortson et al., 2016). Health educators that work within institutions can play a vital role in elevating approaches that help strengthen brain connections, support relationships between school and home environments, and aid children in building a strong foundation for positive health outcomes (Basile et al., 2016; David-Ferdon et al., 2016; Fortson et al., 2016; Niolon et al., 2017). For example, health educators

within schools, churches or worksites can promote and elevate messaging about voluntary early childhood home visitation, high-quality childcare, or preschool with a focus on family engagement (Basile et al., 2016; David-Ferdon et al., 2016; Fortson et al., 2016; Niolon et al., 2017).

Research shows that access to home visitation reduces child abuse and neglect, offers caregiver support, and fortifies care to families in the home—helping build a stable, safe, supportive, and nurturing environment for children (Basile et al., 2016; David-Ferdon et al., 2016; Fortson et al., 2016; Niolon et al., 2017). Additionally, preschool programs and high-quality childcare offer opportunities for children to improve upon their social, cognitive, physical, emotional, literacy, and language skills (David-Ferdon et al., 2016; Niolon et al., 2017). Furthermore, these approaches are associated with reductions in child behavior problems, exposure to intimate partner violence, substantiated reports of child neglect and abuse and out-of-home placements, and parental depression and stress (Fortson et al., 2016; Olds et al., 1997; Olds et al., 1994; Olds et al., 2007; Olds et al., 2004; Reynolds, Temple, Robertson & Mann, 2001; Reynolds et al., 2007; Reynolds et al., 2011; Reynolds & Robertson, 2003).

Community level

On the community level, public health educators can participate in coalitions to contribute as a resource and uncover narratives in communities about the ways in which physical punishment is viewed among different groups of Black families. A similar strategy should be considered as it relates to engaging or promoting mental health supports. Distrust exists among Black men surrounding the mental health care system, still (Brandt, 1978; Nicolaidis et al., 2010). This inherent distrust was birthed out of violence, specifically institutionalized, and necessitates a thoughtful exploration of the historical conditions that helped to create it (Brandt,

1978; Nicolaidis et al., 2010). Furthermore, according to a systematic review on Black males, trauma, and mental health services use, 56-74% of Black males who have been exposed to traumatic events may have an unmet need for mental health services (Motley & Banks, 2018). Thus, principles such as cultural humility would bode well when seeking to implement health education efforts that engage Black men (Curry, 2017; Patton, 2017).

In addition, with attention to careful framing for engaging Black males, community health organizations could make available resources or provide referrals to help lessen the instant and lasting harms of ACEs among Black men. Research shows timely access to intervention, assessment, support and effective care and treatment for children and families can help mitigate the behavioral and health consequences of ACEs (Basile et al., 2016; David-Ferdon et al., 2016; Fortson et al., 2016; Niolon et al., 2017; Stone et al., 2017). A few examples of effective care may include: (1) Culturally sensitive, relationship-focused primary care; (2) Healing-centered engagement services (e.g., not only trauma-informed); (3) Family-centered treatment for individuals living with substance use disorder; (4) Resources on the importance of and interdisciplinary clinically-trained support for infant and early childhood mental health and social emotional skills development; and (5) Strengths-based familial or parenting skills programs (Fortson et al., 2016; Ginwright, 2018; Niolon et al., 2017; Stone et al., 2017).

Policy level

On the policy level, findings from this study suggest, health educators should specify advocacy strategies that aid in strengthening Black families' economic supports. Research shows fortifying financial security for Black households may reduce significant familial challenges, ACEs, and depression (Fortson et al., 2016; Niolon et al., 2017). For example, childcare subsidies, other forms of temporary assistance and liveable wages have been shown to prevent or

mitigate ACEs by increasing family income and economic stability (Fortson et al., 2016; Niolon et al., 2017). In addition, health educators should consider advocating for policies that ensure an equitable workplace (e.g., equitable pay, paid family leave, flexible work schedules) to aid in boosting necessary supports to meet other support needs among Black families (Fortson et al., 2016; Niolon et al., 2017).

Also, on the policy level, it is evident that collective action to remedy the long-lasting generational wealth gaps and damage from slavery and continual discrimination that devastates Black communities remains stalled on a federal level (Ansell et al, 2008; Coates, 2016). This reality is pertinent to ongoing discussions surrounding reparations and other economic pursuits to support Black families (Ansell et al, 2008; Coates, 2016). According to Coates (2016), one of the largest advantages of studying reparations lies in their ability to enlarge the American political vision—as there is a debt owed. However, scholars suggest that the issue of reparations should be addressed from a universal morality approach (e.g., that we are all inherently equal in moral qualities) and human rights standpoint (Ansell et al., 2008). Indeed, according to Ansell et al. (2008), efforts to support reparations must appropriately acknowledge the wrongdoer, the U.S., of the deep-rooted, harsh offenses toward Black individuals, followed by collective action. To that end, other strategies may include health educators advocating for international or global health policy, with an explicit intent to correct said wrong to Black individuals, through material compensation and other forms of remedy.

Lastly, corporal punishment is still legal in 19 states, including the states sampled for this study. Several studies demonstrate the negative impacts of physical abuse, further affirming the need to support policies that seek to boost health promoting child rearing practices, with careful attention to including familial feedback (Dumont & Czaja, 2007; Perez & Widom, 1994;

Sperry & Widom, 2013). Health promotion efforts aimed at individual, interpersonal and community levels while targeted toward expecting parents, certainly those who already have small children, may be more advantageous than awaiting policy change. Though, to hasten changes in policy, health educators should serve as advocates and collaborate with lawmakers and policy makers to place higher emphasis on understanding the impacts of trauma, adverse childhood experiences, even infant and early childhood mental health (ZERO TO THREE, 2017).

Our findings underscore the urgent need for health education interventions to convey accurate information about the harms of physical abuse on later depression to the public, especially the Black men who are already exposed to vast amounts of structural abuse due to racism and social determinants of health. Additionally, these results encourage policymakers and government agencies to have further considerations about reimagining health prevention, promotion, and treatment policy supports for infant and early childhood mental health among Black boys, especially those exposed to ACEs.

Recommendations for Future Research

A significant finding in the present study was that childhood physical abuse exposure was a significant predictor of current depression among Black men. Limited experimental research is available on the impact of physical abuse on depression among Black men. Thus, a content analysis for physical abuse should be considered as a future study as there is a knowledge gap about how hitting of any form may be associated with depression, simply due to spanking being excluded from this study.

Additional studies are needed to further quantify the mental health impacts of household member incarceration on current depression and divorce on lifetime diagnosis of depression

among Black men to inform future health interventions targeting individuals with these ACEs (Wildeman & Western, 2010). To this end, moving the BRFSS ACE module from optional to recommended or required could bode well for informing future mental health initiatives for Black men.

Further research is needed to conduct content validation on an appropriate BRFSS ACE tool to study mental health impacting factors for Black and Brown lesbian, gay, bisexual, transgender, queer, intersex, asexual, cis-gender, non-heterosexual and non-cisgender (LGBTQIA+) individuals due to the exclusion of select orientations and gender identities not collected for the original BRFSS sample.

Lastly, Black men who were incarcerated were excluded from the study. According to Roxburgh & MacArthur (2014) there exist significant differences in vulnerability and exposure to childhood adverse experiences by race/ethnicity and gender. Future research should continue to explore and research ways to efficiently and effectively develop and implement programs and interventions, targeted specifically toward vulnerable groups (e.g., Black men who are incarcerated) to reduce the likelihood of depression later in life (Wang & Wildeman, 2011).

Conclusions

The present study contributed to the literature by growing the body of knowledge surrounding the impact of ACEs on the long term physical and mental health outcomes of Black men. The study also served to increase understandings of ways to address the Healthy People 2020 objectives of both improving mental health through prevention and reducing childhood exposure to abuse (HHS ODPHP, 2015; HHS ODPHP, 2017). The results of this study strengthen the need for further studies in this area of research. In the present sample of Black men, physical abuse and household member incarceration exert a great impact on current

depression. Indeed, verbal abuse and divorce demonstrated a significant relationship with lifetime diagnosis of depression.

Using secondary data, the present study found ways health educators might aim to educate families of the target population on the harms of physical abuse, often occurring in tandem with verbal abuse. Indeed, this study bolsters the need for asset-based strategies that mitigate the impacts of the environmental ACEs, household member incarceration and divorce.

Lastly, this study was by, for and about Black men. The insights of this study are intended to extend health education and promotion beyond the individual, to consider and reckon with the possibilities of suitable change for the advancement of optimal health for Black boys and men.

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APPENDICES

APPENDIX A

Public Datasets Approved for Secondary Analysis Without IRB Review Document

AAHRPP DOCUMENT #105

UNIVERSITY OF ALABAMA
HUMAN RESEARCH PROTECTION PROGRAM

GUIDANCE: Public Datasets Approved For Secondary Analysis Without IRB Review

INVESTIGATORS: The Office for Research Compliance approves certain public datasets for use without application to IRB, provided that the circumstances described in Policy #39, Research Using Publicly Available Datasets (Secondary Analysis) (on website) are met. This policy also describes how investigators may propose additional datasets for this list.
If you have questions about use of a dataset, you are welcome and encouraged to discuss your plans with a Research Compliance Specialist or the Director of Research Compliance.

The following datasets are approved for use by investigators without seeking IRB approval:

Advanced Cognitive Training for Independent Vital Elderly, 1999-2001 (ACTIVE), public data only. Apply through IRB to use restricted sets.

Aging, Status, and Sense of Control (ASOC), 1995, 1998, 2001. (an ICPSR set)

Behavioral Risk Factor Surveillance System (BRFSS, public data only)
California Health Interview Survey (CHIS)
Collaborative Psychiatric Epidemiology Surveys (CPES)
Established Populations for Epidemiologic Studies of the Elderly (EPESE)

Health And Retirement Survey (HRS), University of Michigan
Health Information National Trends Survey (HINTS) (US Government)
Hispanic Established Populations for Epidemiologic Studies of the Elderly (H-EPESE)

Inter-university Consortium for Political and Social Research (ICPSR--public data only)
Medical Expenditure Panel Survey (MEPS)
Midlife in the United States (MIDUS)

National Center for Education Statistics
National Center for Health Statistics
National Election Studies
National Health and Nutrition Examination Survey (NHANES) –Public data only
National Health Interview Survey (NHIS)
National Long Term Care Survey
National Mortality Follow-Back Survey (NMFA) 1993
National Nursing Home Survey (NNHS)
National Survey on Drug Use and Health, 2002-2010
National Youth Survey, Wave I to Wave VII
Survey of Older Americans—Commonwealth Fund, 2004
U.S. Bureau of the Census

Special Elementary Education Longitudinal Study (SEELS)
National Longitudinal Transition Study-2 (NLTS-2)

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