Discrimination, depression, and John Henryism in African American and Caribbean Black adolescents

Erin King

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Discrimination, depression, and John Henryism in African American and Caribbean Black adolescents

By

Erin King

A Thesis
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Master of Science
in Sociology
in the Department of Sociology

Mississippi State, Mississippi

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Erin King

2020
Discrimination, depression, and John Henryism in African American and Caribbean black adolescents

By

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Discrimination is associated with poor health outcomes in minority groups. Minority adolescents often do not have the same access to health care providers as white adolescents. In this study, I analyzed the impact of discrimination on the frequency of depressive symptoms in African American and Caribbean black adolescents. I used data from the National Survey of American Life Adolescent supplement and multivariate regression for this study. The dependent variable in this study is the frequency of depressive symptoms. The independent variables in this study are the Everyday Discrimination scale and the psychological coping mechanism John Henryism. I analyzed the relationship between discrimination and depression and the mediating effects of John Henryism. I found that there was a positive significant relationship between self-reported discrimination and depression and that John Henryism has a small indirect effect on this relationship.
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CHAPTER I
INTRODUCTION

Depression is a common and potentially lethal condition. In 2017, it was estimated that 3.2 million adolescents ages 12 to 17 in the United States experienced at least one major depressive episode (National Institute of Mental Health, 2018). On a surface level, depression may seem like a non-threatening health outcome, but it can lead to academic decline and in extreme cases suicide. The American Public Health Association explains that chronic stress can lead to depression and that students who experience chronic stress may not learn fundamental life skills like reading and multiplication due to the emotional toll of chronic stress (American Public Health Association, 2018).

When experiencing major depressive episodes, adolescents are less likely to receive treatment in comparison to adults (National Institute of Mental Health, 2018). In 2017, 14% of white adolescents experienced at least one major depressive episode and 9.5% of black adolescents experienced at least one major depressive episode (National Institute of Mental Health, 2018). A larger percentage of white adolescents have experienced at least one major depressive episode in comparison to black adolescents. However, black individuals often do not have as much access to healthcare as white individuals (Bailey et al., 2019). In minority groups, depression often goes undiagnosed due to limited access to health care providers and discrimination (Bailey et al., 2019). Some health care providers have been found to believe that African Americans are more resilient against pain than whites (Bailey et al., 2019). Beliefs such
as these can cause health care providers to misdiagnose blacks and potentially view whites with more empathy. Investigating mental health in black adolescents is important because it may improve access to health care providers and increase treatment of depression.

Research has shown that discrimination has been linked to poor mental health in black adults and adolescents (Brown et al., 2000; Coker et al., 2009). However, differences in ethnicity are often not considered when studying the influence of discrimination on depression. African American adolescents are more susceptible to encountering discrimination in comparison to other minority groups (Priest et al., 2018). African American and Caribbean black adolescents experience similar amounts of perceived discrimination, but Caribbean black adolescents experience higher amounts of depression with higher levels of discrimination in comparison to African American youth (Seaton et al., 2008). Researchers have suggested that African American adolescents are more socialized into race in comparison to Caribbean adolescents (Hughes & Johnson, 2001 as cited in Thomas et al., 2009). This may be the reason why Caribbean black adolescents experience worse mental health outcomes when experiencing discrimination.

Coping is an important component to the overall process of buffering stress from discrimination to prevent depression. The stress proliferation model conceptualizes how an initial stressor can manifest into another stressor and cause poor health outcomes. The stress proliferation model also includes coping as a way to buffer the impact of stress. John Henryism, a specific coping style defined as having a strong mental vigor to succeed, may mediate the association between discrimination and depression (James, 1994). African Americans may be more susceptible to adopting this coping style because of the systemic hardships that they often face, but John Henryism is not restricted to individuals from African American populations (James, 1994). John Henryism can lead to positive and negative health outcomes depending on
an individual’s socioeconomic status (Bennett et al., 2004). John Henryism has been studied in adults, but there is limited research on the impact of John Henryism as a mediator on mental health outcomes in black adolescents.

The current study examines the extent to which John Henryism mediates the relationship between self-reported discrimination and depression symptoms among African American and Caribbean black adolescents in the United States. This study evaluated the following questions:

To what extent is self-reported discrimination associated with depressive symptoms in African American and Caribbean black adolescents?

To what extent are demographic and educational factors associated with depressive symptoms in African American and Caribbean black adolescents?

Does John Henryism mediate the association between discrimination and depression in African American and Caribbean black adolescents?

I used data from the National Survey of American Life Adolescent ample to analyze how these mechanisms effect mental health in adolescents. This study further analyzed how household socioeconomic status influences depression, discrimination, and the coping style of John Henryism in African American and Caribbean black adolescents. This study contributes to the existing literature because it focuses on adolescents of African descent and provides insights into the ways in which John Henryism operates in younger populations.

The order of this study is as follows. Chapter two consists of a literature review that describes previous research on depression, discrimination, ethnicity, socioeconomic status, and gender. Chapter two concludes with an overview of the theoretical framework that was used in this study. Chapter three describes the data and methodological approach taken in this study. The results from this study are reported in chapter four. The fifth chapter in this study includes a
summary of the overall findings, potential implications for this research, and the next steps that should be taken in this area of study.
CHAPTER II
LITERATURE REVIEW

The Prevalence of Depression

Depression has gradually increased in youth and adolescents over the past two decades. The Center for Disease Control reported that rates of depression and anxiety in individuals ages 6-17 increased from 5.4% in 2003 to 8.4% from 2011-2012 (Center for Disease Control, 2019). A ethnocultural study by Roberts et al. (1997) on the prevalence of major depression in youth grades 6th-8th found that African American youth had the second highest rate of depression without impairment in comparison to Anglo Americans, Mexican Americans, Central Americans, Indian Americans, Pakistani Americans, Vietnamese Americans, and Chinese Americans. In the next section, demographic and socioeconomic factors are discussed and how they relate to depression. This section concludes with a review of how discrimination influences depression in adolescents.

Race and Ethnicity

Race and ethnicity are often fundamental parts in occurrences of discrimination and other sources of stress that can manifest into poor mental health (Williams, 2018). Caribbean immigrants often have to deal with adjusting to being in America and adapting to societal norms (Livingston et al., 2007). Acculturative stress is defined as, “the phenomenon individuals or groups experience in their adjustment to a new culture” (Livingston et al., 2007, p. 216). Although this study focuses on stress in the form of discrimination, acculturative stress should
still be considered when studying discrimination in immigrant populations. Some Caribbean immigrants may feel as though becoming acculturated to African American culture would be stepping down from their majority culture stance in their home country (Kasinitz, 1992 as cited in Livingston et al., 2007). This may allow Caribbean immigrants to better sustain their cultural views and expressions throughout their family lineage in America even after initial immigration (Livingston et al., 2007). A study by Livingston et al. (2007) on adult Caribbean immigrants in the District of Columbia and the Metropolitan suburbs of Maryland and Virginia found that the relationships between acculturation and depression were significant and positive among Caribbean immigrants. Acculturative stress and socioeconomic status may further influence the intensity of depressive symptoms in immigrant populations (Livingston et al., 2007).

**Socioeconomic Status**

Socioeconomic status (SES) can influence health outcomes. SES is composed of “…multi-dimensional concept[s] comprising a range of factors encompassing economic resources power and/or prestige that can influence health at different levels, and different pathways” (Braveman et al., 2005, as cited in Williams et al, 2016). SES can have an indirect effect on depression from experiencing hardships. The role of discrimination in poor health outcomes can be summarized as how social conditions influence mental and metabolic health through limited access to resources and income strains (Link, 2008). Brown et al. (2017) found that individuals living in the Caribbean with less education, lower income, and participating in fewer religious events had higher rates of depression, depression severity, and suicidal behaviors. This section uses household SES to evaluate the economic background of adolescents rather than individual SES.
Some studies have shown that household SES does influence the over-all psychological wellbeing of youth. McLeod and Owens (2004) found that African American and Hispanic students ages 10 to 11 experienced higher levels of depression when statistical interactions were formed between ethnicity and early levels of poverty. These same statistical interactions were found to reduce depression in white students ages 10 to 11 (McLeod & Owens 2004). These results show that ethnicity does moderate the relationship between early levels of poverty and depression in Hispanic and African American students (McLeod & Owens 2004). A study analyzing depressive symptoms in 677 seventh, eighth, and ninth grade students found that self-reported depression was higher in adolescents with low SES and African American students in comparison to white students (Garrison et al., 1989). However, Miller and Taylor (2012) found that African American youth are more resilient against depressive symptoms than white youth when there is less family support.

Adolescents that experience low SES may experience poor health outcomes in adulthood or an earlier onset of poor health outcomes. A longitudinal study conducted on African Americans ages 17 to 20 in rural Georgia analyzed the impact of self-control on epigenetic aging (Miller et al., 2015). Epigenetic aging is the internal aging that can be influenced by lifestyle and one’s environment. Adolescents that exhibit high self-control experienced better psychological outcomes on depressive symptoms, internalizing problems, substance use, and aggressive behavior at age 22 in comparison adolescents with low self-control (Miller et al., 2015). However, more disadvantaged SES adolescents and high self-control experienced more epigenetic aging than adolescents with high SES and high self-control at age 22 (Miller et al., 2015). The weathering process addresses how black youth may experience morbidity that would be more common in older white individual because of the hardships they face due to racism.
Youth from disadvantaged SES backgrounds may experience more problems associated with their psychological health because of their lack of resources to deal with their environmental surroundings.

Research has shown that the relationship between race, discrimination, and depression may be altered based on each racial group’s level of SES. Miller and Taylor (2012) analysis of racial and socioeconomic differences between white adolescents and African American adolescents found that African American youth are more likely to have lower SES and experience more depressive symptoms than white youth. This study shows how lower SES in adolescents regardless of race may still be predictive of poor health outcomes.

**Gender**

Research has consistently shown that females report having more depressive symptoms than males. Avison and McAlpine (1992) found a similar result of Allgood-Merten et al. (1990) in which the differences in depression among males and females are due to low self-esteem and body image. Avison and McAlpine (1992) analyzed the gender differences in depression in high school seniors and recent graduates and how parental relationships influence adolescent psychological resources. They found consistent results that females did rank higher than males on the depressive symptoms scale and that having positive relationships with both parents is associated with higher levels of psychological resources (Avison & McAlpine, 1992). The findings from a study by Garrison et al. (1989) on persistent depressive symptoms in 7-9th graders is consistent with other findings on females experiencing more depressive symptoms than males. The study found that African American females ages 11 to 17 had the highest amount of persistent depressive symptoms in comparison to white males and females and black males. Another study found that Caribbean females were prone to experience more depressive
symptoms in comparison to Caribbean males (Livingston et al., 2007). Caribbean males had a stronger association between personal problems or stress and depressive symptoms (Livingston et al., 2007).

Research has consistently shown that women experience more depression than men, but when socioeconomic factors are considered results can vary. Some research has shown that African American male adolescents experience more depressive symptoms in comparison to females due to higher household SES. Assari and Caldwell (2018) examined how ethnicity may reduce the protective effects of SES on health outcomes. They used data from the National Survey of American Life-Adolescent Sample to evaluate how household income is used to influences major depressive disorders (MDD). This sample includes African Americans and Caribbean blacks ages 13 to 17. The authors found that income was not a protective factor against MDD in African American males. Assari and Cladwell (2018) did not evaluate how discrimination influences MDD, but the authors suggest that African American male adolescents with high SES frequent spaces where they are more likely to experience discrimination. Assari and Caldwell (2018) authors suggest that African Americans with high SES that seek upward professional mobility in majority white environments may face more discrimination which may lead to depression. Their results are consistent with other research linking self-reported instances of racism from African American boys ages 10 to 15 to more frequent reports of externalizing behavior problems from their guardians and externalizing and internalizing behavior problems from the student (Nyborg & Curry 2003).

These studies show that race and ethnicity have a strong impact on how discrimination is felt and how depression may vary in individuals. High SES may not be a protective factor against poor health outcomes in African Americans. This may be due to frequenting spaces
where discrimination is more likely to be experienced. Minority males with high SES may be at a higher risk of having frequent depressive symptoms. This may be due to experiencing or perceiving more instances of discrimination in comparison to females.

**Discrimination and Depression**

Williams describes racism as when a “dominate group devalues, disempowers, and differentially allocates desirable societal opportunities and resources to racial groups categorized as inferior” (2018, p. 467). Through racism, undesirable opinions and views lead to poor treatment or discrimination against minority groups (Williams, 2018). Research by Seaton et al. (2008) on discrimination and depression on Caribbean black and African American youth found that both African American and Caribbean black males perceive higher amounts of discrimination than both African American and Caribbean black females. A recent national study analyzing stereotypes on 1022 white adults that work with adolescents found that African American youth were more susceptible to being stereotyped by white adults than other minority youth groups (Priest et al., 2018). An early study conducted with data from the National Study of Black Americans on discrimination and health found that self-reported rates of discrimination were not associated with previous mental health problems, but instead that there is a relationship between self-reported discrimination and the onset of poor mental health (Brown et al. 2000).

Discrimination in minority adolescents may be even more harmful because it may lead to depression and other conduct disorders. A study by Coker et al. (2009) on discrimination in a cohort of 5,147 fifth grade students in Birmingham, AL; Los Angeles County, CA; and Houston, TX analyzed the link between racial discrimination and symptoms of mental health disorders. The authors found that Hispanic children who reported experiencing discrimination were more likely to have symptoms of depression, oppositional defiant disorders (ODD), attention deficit
hyperactivity disorder (ADHD), and conduct disorder in comparison to Hispanic students that did not report facing discrimination (Coker et al., 2009). African American fifth grade students experiencing discrimination were more likely to have symptoms of depression and conduct disorder in comparison to African American students that did not experience discrimination (Coker et al., 2009). White fifth grade students that reported discrimination were more likely to have symptoms of ODD and conduct disorder in comparison to white students that did not experience discrimination.

Research has shown that anticipating discrimination may influence the onset of depression just as much as experiencing discrimination. Poor health outcomes due to heightened psychological stimulation may occur even if an individual has not experienced a direct stressor such as discrimination. Minority groups in America may experience depression due to expecting to encounter discrimination. This may cause minority groups to take the necessary steps to prepare for the psychological rigor of discrimination whether it is actually experienced or not. Living in a prolonged heightened state of psychological stimulation or vigilance can lead to mental and emotional distress (Williams, 2018). A study conducted on data from the Exploring Health Disparities in Integrated Communities (EHDIC) database in Southwest Baltimore analyzed the relationship between vigilance as a form of coping (LaViest et al., 2014). Researchers found that African Americans ranked higher on the vigilance scale than Whites and that vigilance was associated with depression (LaViest et al., 2014). Racial discrimination is a major concern, but even if discrimination were to stop recollections of unfair treatment may still plague minority groups and cause these communities to still prepare themselves to encounter racial discrimination.
Theoretical Framework

In this study, I use the stress proliferation model to examine how stress from discrimination influences depressive symptoms. Pearlin et al. (1997) define stress proliferation as “the expression or emergence of stressors within and beyond a situation whose stressfulness was initially more circumscribed” (p. 225). The stress proliferation process consists of primary and secondary stressors, moderators, and the outcome of stress. Primary stressors are conceptualized as adversities and secondary stressors as problems that manifest from life positions and roles. Moderators are described as psychological resources that help individuals alter the effects of stress. Outcomes are defined as the overall wellbeing of individuals in the stress proliferation process.

Primary and Secondary Stressors

Stress is categorized by how strenuous a momentous life event is. Pearlin et al. (1997) believes that the origins of stress can extend into other forms of stress which lead to the concepts of primary and secondary stressors. The authors concluded that primary stressors occur when demands in a role are hard to meet or accomplish because it causes an increase in stressors outside of normal demands in their role (Pearlin et al., 1997). When secondary stressors where analyzed the authors found that strenuous demands in one role of life can trigger problems to arise in other areas. Participants that lacked employment were more likely to be inclined to experience depression. Role overload directly stimulated changes in depression.

A primary focus of this study as it pertains to stressors is how the stress of discrimination influences depression in adolescents. Following the stress proliferation model would mean that there was an initial stressor before discrimination that led to the outcome of depression. Being a part of a minority community would be the initial stressor to discrimination. Research has found
that African American and Caribbean black adolescents perceive equal amounts of discrimination and that discrimination does negatively influence poor health (Seaton et al., 2008; Brown et al., 2000). In order to add to the literature on discrimination and depression, I examine how ethnicity influences depressive symptoms rather than how ethnicity influences perceptions on discrimination.

**Mediation and Coping**

Moderating or mediating components of the stress process are used to combat the effects of stress (Pearlin & Schooler, 1987). However, for the purposes of this study the statistical concept of mediation as a way to explain relationships is used. Pearlin and Schooler (1987) identify coping as social resources, psychological resources, and other specific coping responses. Psychological resources are the personality traits that people possess to resist the effects of stress. Pearlin and Schooler (1987) define coping “as any response to external life-strains that serves to prevent, avoid, or control emotional distress” (1978, p. 3). Coping responses are the actions that people take-up to reduce stress that may be influenced by their psychological resources. Pearlin and Schooler (1978) found that men are more likely to have psychological resources that limit the effects of stressors and that women are more likely to use coping responses that increase stressful outcomes. Their results also concluded that young adults are more likely to participate in self-denigrating behaviors than older adults (Pearlin & Schooler, 1987). Pearlin and Schooler (1978) also revealed that there was a positive relationship between education level and psychological resources. The psychological coping technique, John Henryism, is used as the mediating variable in this study.
**John Henryism and Coping**

In many instances, individuals dealing with discrimination need to cope with the psychological damage that discrimination can cause. John Henryism is a set of personality traits and a psychological coping mechanism that may be used to deal with the pressures of intense discrimination (James, 1994). The term John Henryism, coined by Dr. Sherman James was used to pay homage to the John Henry folktale. The folktale is about an African American male railroad worker named John Henry that competed against a steam-powered drill to prove that he could work more efficiently than the machine (James, 1994). John Henry defeated the machine and dies shortly after his victory.

James (1994) concentrates John Henryism on African American men and women that are a part of the working class because African Americans tend to endure some of the most severe oppressive environmental stressors (James, 1994).

Lower socioeconomic status individuals in general, and African Americans in particular, are routinely exposed to psychosocial stressors (e.g., chronic financial strain, job insecurity, and subtle or perhaps not so subtle social insults to race or social class) that require them to use considerable energy each day to manage the psychological stress generated by those conditions (James, 1994, p. 167-68).

The John Henryism hypothesis specifically warns against the potential threat of hypertension. However, the concept of John Henryism has been associated with other poor psychological health outcomes (Hudson et al., 2016). Hypertension and depression can be interrelated, and both are extensions of stress and James’ concept of John Henryism. James (1994) is aware that not all persons experiencing oppressive conditions will use this high-effort coping mechanism. He believed that individuals that are motivated to achieve their goals are more prone to engage in
this form of coping (James, 1994). The hypothesis is supported if individuals living with lower SES engage in John Henryism as a coping mechanism under strenuous circumstances and experience poor health outcomes.

John Henryism is comparable to the Weathering hypothesis and the personality trait called Grit. The weathering hypothesis suggests that early poor health outcomes in African Americans occur are a result of social and economic discrimination (Geronimus, 1992 as cited in Geronimus et al., 2006). The Weathering hypothesis differs from John Henryism in that it focuses more on the early life experiences in African Americans (Geronimus, 1992 as cited in Geronimus et al., 2006). John Henryism focus on the occurrence of poor health outcomes rather than the time frame and onset of poor health outcomes (James, 1994). Grit is similar to the concept of John Henryism in that it also requires a sense of stamina and an unwavering determination to succeed (Duckworth & Peterson, 2007; James, 1994). However, in terms of their differences, the concept of grit focuses on the characteristics needed to accomplish long-term goals while John Henryism uses the combination of perseverance and socioeconomic status to evaluate health (Duckworth & Peterson, 2007; James, 1994).

**Hypothesis**

The stress proliferation process is traditionally used to measure the impact for stress as its outcomes. Discrimination is evaluated as a stressor in this study because research has shown that discrimination has the ability to create a heightened level of vigilance and poor health outcomes (LaViest et al., 2014; Brown et al., 2000). In this study, John Henryism represents a psychological coping style that is often used to deal with discrimination. The outcomes of stress for the stress proliferation model is measured through the presence instances of depressive symptoms. The hypotheses tested in this study are listed below:
H1: *African Americans and Caribbean black adolescents with high perception of discrimination will have high levels of depressive symptoms.* Seaton et. al (2008) found that African American and Caribbean black adolescents that had higher perceptions of discrimination influence higher frequencies of depression symptoms.

H2: *Female adolescents will have higher levels of depressive symptoms in comparison to males.* Research has shown that adolescent females experience more depressive symptoms than adolescent males (Avison & McAlpine, 1992). Caribbean female experiences higher amounts of depression in comparison to Caribbean males (Livingston et al., 2007). African American females reported having higher frequencies of depressive symptoms in comparison to African American males and white males and females (Garrison et al., 1989).

H3: *African American and Caribbean black adolescents from higher socioeconomic backgrounds will have higher levels of depressive symptoms.* Assari and Caldwell (2018) found that African American males with high SES had higher amounts of major depression in comparison to African American females and Caribbean black males and females.

H4: *John Henryism will mediate the relationship between discrimination and depression in African American and Caribbean black adolescents.* Hudson (2016) found that there was not a significant interaction between John Henryism and discrimination, but the researchers did find that there was a positive relationship between discrimination and depression and between John Henryism and depression.
CHAPTER III
DATA AND METHODS

The outcome variable of interest in this study is self-reported depressive symptoms. The predictor variable of interest in this study is self-reported discrimination. I examined how discrimination influences depression in African Americans and Caribbean black adolescents. I used the stress proliferation framework to test the mediating effects of John Henryism as a coping mechanism between discrimination and depression. The sample is not racially diverse, so ethnicity was tested to distinguish the difference between African Americans and Caribbean blacks.

Data

I used data from the National Survey of American Life Adolescent sample (NSAL-A). The NSAL-A is a supplement of the National Survey of American Life (NSAL). The NSAL is a nationally representative data set that was created to help researchers evaluate ethnic and racial differences in psychiatric health (Jackson et al., 2004a). This data was collected by the Program for Research on Black Americans (PRBA) through the Institute of Social Research at the University of Michigan (Jackson et al., 2004a). The NSAL-A is currently the most inclusive data set on the psychiatric health of American adolescents of African descent (Jackson et al., 2004a). The NSAL-A was administered to adolescents that were connected to the adult households in the NSAL and through face to face interviews (Resource Center for Minority Data, 2016). The response rate for the adolescent sample is 80.6% (Resource Center for Minority Data, 2016).
Data from the NSAL-A was collected to provide sufficient information on the onset of mental health disorders and how family relationships influence health outcomes in adolescents (Jackson et al., 2004a).

Interviewer training and cultural competency were made a priority in the collection of this data. Community residents were recruited to administer surveys and participants were matched with interviewers based on race (Resource Center for Minority Data, 2016). Over 300 interviewers were trained to administer the surveys for this project (Jackson et al., 2004a). Four interviewer training sessions took place to equip interviewers with the tools and techniques necessary to administer the surveys (Jackson et al., 2004a). In addition to psychiatric health, the survey captures information on demographics, activities and school, employment, characteristics, religion, social support, racial identity, discrimination, community, the September 11th attacks, and media (Jackson et al., 2001-2004b).

Sample

A total of 1,200 adolescents were interviewed in the NSAL-A. After listwise deleting respondents with missing data, the final sample was reduced to 1,170 Caribbean blacks (N=810) and African America (N=360) adolescents (Jackson et al., 2001-2004b). Participants range from 13 to 17 years old (Jackson et al., 2001-2004b). There are 563 males and 607 females in this sample. A total of 11 missing cases were removed from the final sample. Six of the missing cases were removed from the poverty index scale and 5 missing cases were removed from the John Henryism Scale. The analytic sample for this study includes 1,159 cases.
Measures

Dependent Variable

In this study depression was operationalized through the Center for Epidemiological Studies Depression scale (CESD). This scale measures the frequency of self-reported depressive symptoms experienced by participants in the last week (Radloff, 1977). The original scale includes 20 items and was created to capture depressive mood, feelings of helplessness and hopelessness, psychomotor retardations, loss of appetite, and sleep (Radloff, 1977). The scale \( \alpha = .68 \) for this study has been shortened to 12- items. The abbreviated scale ranges from 0 to 30. As depressive symptoms increase, the participant score on the scale increases. The response categories for this scale are 0=rarely or none of the time, 1=some or a little of the time, 2=occasionally or moderate amount of the time, and 3=most of the time. (Jackson et al., 2001-2004c:211). The everyday depression scale for this study was created by the authors of the NSAL-A data set.

Independent Variable

The independent variables in this study are discrimination and John Henryism. The concept of discrimination was operationalized through the Everyday Discrimination scale which includes additional questions about teacher discrimination for the adolescent sample. The discrimination and John Henryism scales used in this study were created by the authors of NSAL-A data set. The Everyday Discrimination scale \( \alpha = .86 \) includes 13 items about the discrimination that adolescents experienced in the past year (Jackson, 2001-2004c, p. 271). The scale ranges from 0 to 13. Responses to this question are coded as follows: 1=Almost every day, 2=At Least Once a Week, 3=Few Times a Year, 5=Less than once a year, and 6=Never (Jackson, 2001-2004, p. 271).
The coping mechanism John Henryism was operationalized through the John Henryism scale in the NSAL-A. The John Henryism scale is a 12-item summed scale ($\alpha=.69$) that captures, “… (1) efficacious mental and physical vigor; (2) a strong commitment to hard work; and (3) a single-minded determination to succeed” (James, 1994, p. 169). The scale ranges from 15 to 48. The responses in the scale range from 1=Completely True, 2=Somewhat True, 3=Somewhat False, 4=Completely False” (Jackson et al., 2001-2004c, p.12).

**Control Variables**

The control variables in this study are ethnicity, sex, age, grade level, and household SES. Due to the limited amount of variability in racial identity, ethnicity was used to determine the differences in the participants. This variable has been recoded as a dichotomous variable with 0=African Americans and 1=Caribbean blacks. Sex was recoded into a dichotomous variable with 0=males and 1=females. Grade level ranges from 5th grade to post high school. This variable is treated as a continuous variable.

Household SES was measured through the poverty index variable. Household income was imputed into this data set from the adult data set to create the poverty index variable (Jackson et al., 2001-2004b). This index was calculated by dividing the participant’s household income by the poverty level. The poverty index is a tool used to compare where individuals fall in terms of living in poverty based on household income and family size. The poverty measures used to determine the poverty threshold were created in 1960 by Mollie Orshansky, an economist at the Social Security Administration (United States Census Bureau, 2019). A score less than one indicates that a person is living below the poverty line based on their household size and income. An individual with a score of 1 or greater would be living above the poverty line. The poverty threshold which is a measure that… is updated annually for inflation through the Consumer Price
Index for All Urban Consumers (CIP-U) (United States Census Bureau, 2019). The Poverty index remains the same for all states and only changes based on household size (United States Census Bureau, 2019).

**Analytic Strategy**

Stata 15 was used to analyze the data for this study. Tests for normality of the variables revealed that the CESD-12 scale, Everyday Discrimination scale, and the poverty index were all slightly right skewed. Test for normality also revealed that the John Henryism scale was left skewed. These variables were not transformed because regression diagnostics revealed that there was limited deviation from normality in the middle of the range of data and at the tails. The mean and median for each variable also determined that they did not need to be transformed. There was not a distinct pattern in the residual vs fitted scatter plots. This indicates that there is limited heteroskedasticity in the model. The mean VIF for all variables is 1.03 this also shows that there were no issues with multicollinearity in the model.

I use multivariate regression to assess the relationship between discrimination and depression and the attenuating effects of John Henryism on the relationship between discrimination and depression. Weights were applied to this.

The first regression model in this study estimated the relationship between discrimination and depression. The second model in this study estimated the relationship between discrimination and depression with the control variables. The third model that I tested estimated the relationship between discrimination and depression and the controls along with John Henryism as a mediator. Mediation effects were determined based on if the coefficient of John Henryism reduces the coefficient of discrimination and if significance is shown. I calculated the total mediating effect of John Henryism on discrimination and depression based on models two
and three. These models were compared to account for potential confounders when analyzing the mediating effects of John Henryism. Confounders are defined as variables that have a relationship with the outcome variable but are also connected with each other (Agresti, 2018).

Equation:

\[ Y = \beta_0 + \beta \text{Discrimination} + \beta \text{John Henryism} + \beta \text{Ethnicity} + \beta \text{Grade Level} + \beta \text{Household SES} + \beta \text{Sex} \]  

\[ (3.1) \]
CHAPTER IV
RESULTS

The results for this study are presented in three parts. The first part of this section reports findings on descriptive statistics. The second part of the results section reports findings from three linear regression models analyzing depression, discrimination, and demographic characteristics. The third part of this section reports results on the mediation effects of John Henryism.

Descriptive Analysis

Dependent and Independent Variables

The descriptive statistics for the 1,159 participants are reported in Table 4.0. The median score for Depression is 8. The mean for participants ranked on the Depression scale is 8.92 and each case is 5.27 standard deviations away from the mean. The median score on the Everyday Discrimination scale is 5. The mean for each participant’s score on the Everyday Discrimination scale is 5.11 and each case is 3.88 standard deviations away from the mean. The median score on the John Henryism scale is 41. The mean for each participant’s score on the John Henryism scale is 40.66 and each case is 4.23 deviations away from the mean.

Demographic and Control Variables

The demographic and control variables used in this study are also listed in Table 1. About one third of the sample is composed of Caribbean black adolescents (30.58%). The majority of
the adolescents in this sample are African American (69.42%). The sample in this study almost evenly represents males (48.28%) and females (51.72%). The last grade completed by most adolescents in this sample is categorized as high school freshman (22.78%). Most of the students in the sample indicated that they had completed a level of high school (70.40%). The median score for Household SES is 1.61. The mean for adolescents on Household SES is 2.15 and each case is 2.36 standard deviations away from the mean.
Table 4.1  Descriptive Statistics for Everyday Discrimination, Demographics, and John Henryism N=1,159

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>8.92</td>
<td>8</td>
<td>5.27</td>
<td>0</td>
<td>5.27</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td><strong>Independent Variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Everyday Discrimination</td>
<td>5.11</td>
<td>5</td>
<td>3.88</td>
<td>0</td>
<td>3.88</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>John Henryism</td>
<td>40.66</td>
<td>41</td>
<td>4.23</td>
<td>15</td>
<td>4.23</td>
<td>15</td>
<td>48</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>808</td>
<td>69.42%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caribbean Black</td>
<td>356</td>
<td>30.58%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>562</td>
<td>48.28%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>602</td>
<td>51.72%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last School Grade Completed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th Grade</td>
<td>1</td>
<td>0.09%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Grade</td>
<td>27</td>
<td>2.32%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th Grade</td>
<td>90</td>
<td>7.73%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th Grade</td>
<td>218</td>
<td>18.73%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Freshman</td>
<td>264</td>
<td>22.68%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Sophomore</td>
<td>228</td>
<td>19.59%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Junior</td>
<td>195</td>
<td>16.75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Senior</td>
<td>132</td>
<td>11.34%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post High School</td>
<td>9</td>
<td>0.77%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Multivariate Regression**

The results for the multivariate regression are listed in 0. Model 1 only includes the variable Everyday Discrimination. The coefficient for Everyday Discrimination is positive and significant (p<0.001). When controlling for each unit increase in Everyday Discrimination in model 1, I can expect a .227 increase in the frequency of Depression. This indicates that as discrimination in African American and Caribbean Black adolescents increases the frequency of depressive symptoms also increases.

Model 2 includes Everyday Discrimination, ethnicity, female, last school grade completed, and the Household SES. The coefficient for Everyday Discrimination remained positive and significant. The coefficient for ethnicity is negative and not significant. This indicates that Caribbean black adolescents experience fewer depressive symptoms in reference to African American adolescents. The coefficient for female is positive with non-significant meaning that females have an increase in the frequency of depressive symptoms in comparison to males. The coefficient for last grade completed is negative and significant (p<0.05). This explains that as grade level increases the frequency of depressive symptoms decreases. The coefficient for Household SES is negative and significant (p<0.05). When controlling for each unit increase in Household SES in model 2, I can expect an .114 decrease in the frequency of depressive symptoms in black adolescents. This means that as income increases the frequency of depressive symptoms decreases.

Model 3 includes all the variables with the addition of the John Henryism variable. The coefficient for Everyday Discrimination remained positive and significant. The coefficient for ethnicity remained negative and non-significant. The coefficient for last grade completed
remained negative but was not significant. The coefficient for Household SES remained negative
the level of significance remained the same. The coefficient for John Henryism is negative and
significant (p<0.001). When controlling for each increase in the John Henryism scale, I would
expect a .193 decrease in the frequency of depression in black adolescents.
### Table 4.2 Multivariate Regression Coefficients for Discrimination, Demographics, and John Henryism N=1,159

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>Std. Err.</td>
<td>β</td>
</tr>
<tr>
<td>Everyday Discrimination</td>
<td>0.201***</td>
<td>0.039</td>
<td>0.227***</td>
</tr>
<tr>
<td>Caribbean black adolescents</td>
<td>-0.441</td>
<td>0.332</td>
<td>-0.538</td>
</tr>
<tr>
<td>Female</td>
<td>0.415</td>
<td>0.307</td>
<td>0.539</td>
</tr>
<tr>
<td>Last School Grade Completed</td>
<td>-0.211*</td>
<td>0.098</td>
<td>-0.185</td>
</tr>
<tr>
<td>Household SES</td>
<td>-0.114*</td>
<td>0.057</td>
<td>-0.125*</td>
</tr>
<tr>
<td>John Henryism</td>
<td></td>
<td></td>
<td>-0.193***</td>
</tr>
<tr>
<td>Constant</td>
<td>7.891***</td>
<td>0.253</td>
<td>9.937***</td>
</tr>
</tbody>
</table>

***p<0.001 p<0.01 p<0.05 R2=.058 Adj. r=.054

Notes

a. The reference category for ethnicity is Caribbean black adolescents

b. The reference category for sex is male
Mediation

Tests for mediation were evaluated through progressive adjustment and Sobel’s test for mediation. Progressive adjustment evaluates the reduction in a coefficient moving across models. Sobel’s test evaluates the coefficients and standard errors of the main independent variable and the mediation variable. The total association between Everyday Discrimination and Depression is .201. After ethnicity, female, and grade level were added in model 2 the association between Everyday Discrimination and Depression increased in size, but not significance. In model 3, the addition of John Henryism caused the association between Everyday Discriminating and Depression to diminish in size, but not significance. Sobel’s test revealed that the reduction in model 3 is significant (p<0.001). This indicates that John Henryism significantly mediates the relationship between self-reported discrimination and depressive symptoms.
CHAPTER V
DISCUSSION

The purpose of this study was to analyze the relationship between discrimination, depression, and John Henryism in black adolescents. Researchers have analyzed the relationship between discrimination and depression in adolescents, but their efforts have mainly focused on how demographic factors and values influence this relationship. The moderating effects of John Henryism are normally evaluated in adults on the relationship between discrimination and depression. In this study, I evaluated the mediating effects of John Henryism on the relationship between discrimination and depression in black adolescents.

The first hypothesis in this study predicted that African American and Caribbean black adolescents with high perceptions of discrimination will have an increase in frequencies of depressive symptoms. Previous research has shown that discrimination does increase depression (Coker et al., 2009; Brown et al., 2000; Seaton et al., 2008). The current study was consistent with previous research in finding that discrimination increases the frequency of depressive symptoms in black adolescents.

The second hypothesis in this study predicted that female adolescents will have a higher frequency of depressive symptoms in comparison to males. The findings in this study were consistent with other research stating that females experience more depressive symptoms than males (Avison & McApline, 1992; Garrison et al., 1989). This finding shows that more emphasis
may need to be placed on the importance of ethnicity when evaluating gender differences in depression.

The third hypothesis in this study predicted that African American and Caribbean black adolescents with higher household SES will experience more symptoms of depression. In the current study, higher levels on the poverty index scale predicted lower frequencies of depressive symptoms. This finding is constant with the notion that SES can improve overall health because it often allows for more access to resources (Link 2008; McLeod & Owens 2004).

The fourth hypothesis in this study predicted that John Henryism will mediate the association between depression and discrimination in African American and Caribbean black adolescents. The result form this study revealed that higher scores on the John Henryism scale reduces that frequency of depressive symptoms in black adolescents. This finding is not consistent with research done on adults that found John Henryism to increase depression (Hudson et al. 2016). The results from this study suggest that John Henryism may be helpful to students in singular use. This study did not evaluate the effects of John Henryism in interaction with discrimination on depression. This relationship may be more harmful to students than when John Henryism is used without an interaction. Test for mediation revealed that John Henryism does have an indirect effect on the relationship between discrimination and depression in black adolescents. These findings are important because they reveal that John Henryism may operate differently in adolescents in comparison to adults. The results also suggest, that John Henryism does partially explain the relationship between discrimination and depression in African Americans and Caribbean black adolescents.
Limitations

The current study has contributed to the literature on discrimination and depression by examining coping styles in adolescents, but there are several limitations that need to be addressed that may improve future research in this area. The greatest limitation in this study is its lack of racial diversity. Although there is a great need for research on ethnicity and depression, having a more racially mixed sample could have provided a greater contrast between adolescents on the outcome of depression. Self-reported data is also a limitation in this study. Having access to medical records from physicians may have greatly increased the accuracy of the listed depressive symptoms. However, accounts of perceived discrimination would always have to be recorded by the participants. The final limitation of this study is not having access to a completed measure of Caribbean adolescents’ native country. This measure would have made the analysis of the study stronger. This would have allowed me to determine if some Caribbean countries offer more of a protective effect against depression.

Future Recommendations

Future research conducted on depression in black adolescents should focus on the interactive effects of coping styles and discrimination. The characteristic of John Henryism requires individuals to face some type of adversity or struggle in order for its true effects to be analyzed (Bennett et al., 2004; James, 1994). Testing the moderating effects of this relationship may determine how effective John Henryism is as a buffer to depression. Even with the results in the current study, I caution adolescents and adults from actively engaging in John Henryism because of the potential risk of poor health outcomes.

There have been several initiatives and programs set in place to combat the effects of discrimination and mental health in adolescents. The health initiative Healthy People 2020 has
incorporated the concept of the social determinates of health into their framework to reduce health problems that are related to social conditions and improve the over-all well-being of Americans (Office of Disease Prevention and Health Promotion, 2019). Although this health initiative as well as others have been set in place to improve the overall health outcomes of Americans, race and ethnicity related health disparities continues to be problematic.

This study should be used to help health educators understand the importance of considering discrimination when evaluating health outcomes in youth. Coping with stress is a process, but often adolescents do not have the proper tools to actively cope with their environment. At a glance a coping mechanism like John Henryism may seem like a healthy coping mechanism, but in some instances, it may be linked to poor health outcomes. Teaching adolescents about discrimination and understanding how systematic oppression works may be beneficial to their health. There are some circumstances where hard-work and dedication may not pay-off due to systemic racism. Hopefully, this study will inspire educators to teach adolescents the importance of healthy coping styles and influences practitioners to consider cultural and ethnic differences when evaluating minority groups.
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socioeconomic status and health patterns and prospects. *Journal of Health Psychology*,
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36
### Questionnaires

**Table A.1  CESD-12 Scale**

<table>
<thead>
<tr>
<th>Question</th>
<th>Rarely or none of the time (less than 1 day)</th>
<th>some or a little of the time (1-2 days)</th>
<th>Occasionally or a moderate amount of the time (3-4 days)</th>
<th>Most or all of the time (5-7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt that I was just as good as other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had trouble keeping my mind on what I was doing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt depressed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that everything I did was an effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt hopeful about the future</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My sleep was restless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was happy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People were unfriendly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoyed life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had crying spells</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that people disliked me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I could not get &quot;going&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A.2  Everyday Discrimination Scale

<table>
<thead>
<tr>
<th></th>
<th>Almost everyday</th>
<th>At least once a week</th>
<th>A few times a month</th>
<th>A few times a year</th>
<th>Less than once a year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are treated with less courtesy than other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You are treated with less respect than other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You received poorer service than other people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>at restaurants or stores.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People act as if they think you are not smart.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People act as if they are afraid of you.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People act as if they think you are dishonest.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People act as if they're better than you are.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You are called names or insulted.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You are threatened or harassed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You are followed around in stores.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your teachers treat you with less respect than</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your teachers act as if think you are not smart.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You teachers act as if they are afraid of you.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A.3  John Henrysim Scale

<table>
<thead>
<tr>
<th>Statement</th>
<th>Completely True</th>
<th>Somewhat True</th>
<th>Somewhat False</th>
<th>Completely False</th>
</tr>
</thead>
<tbody>
<tr>
<td>I've always felt that I could make of my life pretty much what I wanted to make of it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once I make up my mind to do something, I stay with it until the job is completely done.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t let my personal feelings get in the way of getting the job done.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It's important for me to be able to do things in the way I want to do them rather than in the way other people want me to do them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes I feel that if anything is going to be done right, I have to do it myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like doing things that other people thought could not be done.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I am the kind of individual who stands up for what he believes in, regardless of the consequences.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard work has really helped me to get ahead in life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When things don’t go the way I want them to, that just makes me work even harder.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very seldom have I been disappointed by the results of hard work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the past, even when things got really tough, I never lost sight of my goals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Correlation

Table A.4 Correlation of Depression, Discrimination, John Henryism, and Demographics

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Everyday Discrimination</th>
<th>John Henryism</th>
<th>Poverty Index</th>
<th>Caribbean black adolescents</th>
<th>Female</th>
<th>Last Grade Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Everyday Discrimination</td>
<td>0.149</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>John Henryism</td>
<td>-0.168</td>
<td>-0.147</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty Index</td>
<td>-0.074</td>
<td>0.062</td>
<td>-0.030</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caribbean black adolescents</td>
<td>-0.037</td>
<td>0.040</td>
<td>-0.057</td>
<td>0.037</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.010</td>
<td>-0.090</td>
<td>0.082</td>
<td>-0.000</td>
<td>0.027</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Grade Level</td>
<td>-0.045</td>
<td>0.144</td>
<td>0.028</td>
<td>0.120</td>
<td>0.092</td>
<td>0.082</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Sobel’s Test Results

Table A.5  Sobel’s Test Results for the Mediation effects of John Henryism

<table>
<thead>
<tr>
<th>Input</th>
<th>Test Statistic</th>
<th>Standard Error</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.227</td>
<td>-3.897</td>
<td>0.012</td>
</tr>
<tr>
<td>b</td>
<td>-0.196</td>
<td>0.012</td>
<td>0.000</td>
</tr>
<tr>
<td>sa</td>
<td>0.040</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sb</td>
<td>0.036</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Histograms

Figure A.1  CESD-12 Histogram
Figure A.2  Everyday Discrimination Histogram

Figure A.3  Poverty Index Histogram
Figure A.4  Grade Level Histogram

Figure A.5  John Henryism Scale Histogram
Scatter Plot

Figure A.6  Residual-verses-Fitted Scatter Plot

Figure A.7  Qnorm r
Figure A.8 Pnorm r

**Formula**

Sobel’s Test

**Equation:**

\[ z = \frac{ab}{\text{SQRT}(b^2 \text{SE}_a^2 + a^2 \text{SE}_b^2)} \]  \hspace{1cm} (A.1)