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Effect of stress on health of African American women in low income neighborhoods

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Effect of stress on health of African American women in low income neighborhoods

Abstract

Health problems, like obesity, are more prevalent in populations of African American women than any other population in the United States. Furthermore, stress has been found to disproportionately affect the health of African American women when compared to European American women. Factors such as neighborhood environment, socioeconomic status, and familial relationships play a significant role in the stress experienced by these women. This project aims to review the current literature on the relationship between neighborhood environment, socioeconomic disparity, stress, and the effects of stressors on health, among African American women. The purpose of this research is to increase understanding of the unique stressors that African American women face, and the consequences this stress may have on health. This research hopes to explain how psychological stress and living in a low-income neighborhood could be the instrumental factors impacting obesity and mortality rates in this community.

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Effect of Stress on Health of African American Women in Low Income Neighborhoods

by

Jada C. Childs

A Senior Thesis Submitted to the

Eastern Michigan University

Honors College

in Partial Fulfillment of the Requirements for Graduation

with Honors in Psychology

Approved at Ypsilanti, Michigan, on this date _____04/27/21_____

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ABSTRACT

Health problems, like obesity, are more prevalent in populations of African American women than any other population in the United States. Furthermore, stress has been found to disproportionately affect the health of African American women when compared to European American women. Factors such as neighborhood environment, socioeconomic status, and familial relationships play a significant role in the stress experienced by these women. This project aims to review the current literature on the relationship between neighborhood environment, socioeconomic disparity, stress, and the effects of stressors on health, among African American women. The purpose of this research is to increase understanding of the unique stressors that African American women face, and the consequences this stress may have on health. This research hopes to explain how psychological stress and living in a low-income neighborhood could be the instrumental factors impacting obesity and mortality rates in this community.

Introduction

African American women are one of the most vulnerable populations in America (Hamilton-Mason, Hall, & Everett, 2009). This group of women experience both racism and sexism in their everyday lives. The stress procured from these interactions can lead to a host of different health issues and health disparities. These health disparities may be key factors resulting in the higher mortality rates of African American women when compared to European American women (Williams, 2009). There are disparities among women of color and European American women when it comes to several chronic diseases. These diseases include breast cancer (Newman et al., 2017), cardiovascular disease (American Heart Association, 2016), hypertension (Jones et al., 2018), and more.

One health risk that is of high concern in the population of African American women is obesity. Obesity rates are higher in African American women than Hispanic women (Tan et al., 2017), European American women (Lynch, 2014), and Afro-Caribbean women (Barrington, 2018). These statistics are quite concerning, considering that obesity is one of America's leading causes of death (American Heart Association, 2016). The reasoning behind the disparities in obesity between African American women and other races has been linked to neighborhood and poverty (Akil & Ahmad, 2011), health education (Barrington, 2017), and cultural views on body image (Schuler et al., 2008). Another factor that research shows may play a role in obesity rates is coping mechanisms (Tan et al., 2017). These coping mechanisms may develop due to the psychological stress that many African Americans experience.

African American women are very vulnerable to stress. They are exposed to the weight of race-related stress (Hill & Hoggard, 2018) and being women in America. This means that these women are constantly under the pressure of living in two different discriminatory roles. African American women experience a unique stress set due to being Black and also having to deal with the added pressures of sexism in their day to day lives and careers (Perry et al., 2013). Due to this set of unique, personal, stressors that relate to being Black women in America, African American women oftentimes find themselves falling victim to the practice of internalizing these stressors. Once these stressors are internalized, they give way to experiences that researchers refer to as the Superwoman Schema (Woods-Giscombé, 2010), and the Strong Black Woman schema (Yu-Hsin, et al., 2019). Both are defined by the roles of which African American women feel that they are forced to play within society and in their own families and communities.

The same challenges that effect the health of these women are the same challenges that effect their stress. Finances and neighborhood environments play an instrumental role in the stress faced by these women (Ajrouch et al., 2010). Marriage rates are low and divorce rates are high for African Americans (Chambers & Kravitz, 2011). This causes many women to be the head of households without help from a partner (Hamilton-Mason et al., 2009). The psychological stress stemming from financial burdens, neighborhood disorganization, and these internalized schemas could be linked to health risks such as heart disease (Wirtz & von Kanel, 2017), chronic kidney disease (McClellan et al, 2010), and obesity (Lopez, 2007; Singh, 2010).

It is clear that factors like stress and health are related to one another. This paper aims to review stressors that most impact African American women and their health. The purpose is to increase understanding of the unique stressors that African American women face and the consequences this stress may have on health. An overview of how specific factors of the African

American woman's life, such as living in low-income neighborhoods, uniquely impacts the health and stress will be reviewed. It is from this information that preventative measures can be implemented to decrease stress and health disparities for African American women in low-income neighborhoods.

Background

Health Disparities in African American Women

Throughout the years, research studies have consistently revealed that African American women have a greater overall mortality rate than European American women (Williams, 2009). Higher risk for multiple diseases has contributed to this overall health disparity. One factor that could possibly be influencing these mortality rates are the disparities in cardiovascular, diabetes, and obesity rates that are much more evident in the African American community (Knox-Kazimierczuk & Shockly-Smith, 2017). For example, according to the American Heart Association (2016), African American women have a higher rate of death due to cardiovascular disease than do European American women. Additionally, African American women also experience higher rates of sexual and reproductive health conditions compared to European Americans (Prather et al., 2016). Research conducted over the past several years has continued to show these same troubling trends concerning the health of Black women.

There is an increased risk of breast cancer and breast cancer mortality in African American women in comparison to European American women (Newman et al., 2017). One study found that type 2 diabetes increased the chance of African American women being diagnosed with breast cancer by 40% (Holt, 2018). Type 2 diabetes also contributes to cardiovascular disease and higher rates of mortality (Stojek et al., 2019). Despite medical advances, African Americans still tend to

have higher rates of diabetes than European Americans. Diabetes affects about 7% of the White population whereas it affects about 13% of the Black population (Cooke et al., 2017).

Hypertension is another of the health concerns that is more prevalent in African American women than any other group. These women are diagnosed with hypertension at a younger age and have higher blood pressure readings, which can lead to stroke, end-stage renal disease, and death (Jones et al., 2018). About 30% of White Americans compared to 40% of Black Americans are diagnosed with hypertension. The mortality rate due to hypertension is about 15 deaths for every 100,000 White men and women and about 40 for every 100,000 Black women alone (Hicken et al., 2019). African Americans are three times more likely to develop kidney failure when compared to the general population (Panico & Thompson, 2018). The cause of these health disparities has been said to be due to inadequate healthcare access and lower standards of care. However, even when adequate health care is received, the disparities of minority groups still remain (Woods-Giscombé, 2010). Data consistently show that African Americans are at a greater risk for health problems, as described above. However, differences in rates of obesity may be especially important. Obesity rates are much higher in the African American community and this could also be an important contributor to other health issues in this population (Knox-Kazimierczuk & Shockly-Smith, 2017).

Obesity in African American Women. Obesity results from an energy imbalance between what is consumed and what is burned off through metabolism and physical activity (Akil & Ahmad, 2011). Obesity is a global health concern, but the highest rates are found in the United States. Obesity is related to diseases such as hypertension, type 2 diabetes, coronary heart disease, stroke, infertility, certain cancers, and more (Brewer & Balen, 2010; Hruby et al., 2016). There are disparities dependent upon gender, race, and socioeconomic status (Arroyo-Johnson &

Mincey, 2016). Obesity is more prevalent in African American women than African American men and Hispanic women (Tan et al., 2017). Statistics show that 82% of African American women are overweight, 56.9% of African American women are obese, and it is estimated that more than 50% of new cases of hypertension in African Americans is due to excess weight (Pickett & McCoy, 2017). Many studies have shown that obesity is more prevalent in African American women than European American women (Lynch, 2014). However, obesity is also more prevalent in African American women than even Afro-Caribbean women. The prevalence of obesity is 34% higher in African American women than in Afro-Caribbean women (Barrington, 2018). Almost two-thirds of African American women within the United States are considered obese (Agyemang & Powell-Wiley, 2013). This is concerning because, according to the American Heart Association (2016), obesity is currently the leading cause of death and disability in the United States.

There are many factors that may contribute to higher rates of obesity among African American women. Studies show a strong relationship between obesity and poverty, food stamp receivers, unemployment, and general income level (Akil & Ahmad, 2011). However, social determinants may be especially important factors impacting African American women's health. Social determinants of health, defined as the contexts of one's environment, are considered obesity risk factors. For example, access to environments that promote activity are important for maintaining a healthy weight (Saelens et al., 2012). Some physical characteristics of an environment that would promote physical activity are green spaces, parks and recreational buildings, sidewalks, and bike lanes. Social determinants of obesity include socioeconomic conditions, residential segregation, and access to healthcare services, transportation, resource availability, and social support (Arroyo-Johnson & Mincey, 2010).

African American women are less likely to have access to some of these crucial determinants. For example, African American women may be less likely to take consistent walks in their own neighborhoods. Research shows that walkability has an effect on moderate to vigorous physical activity, but that crime limits this activity (Richardson et al., 2017). It is possible that crime may cause African American women to feel less safe in their environments, making it less likely that they will engage in behaviors like going on morning jogs or walks around their neighborhoods (Zenk et al., 2010). Additionally, there is an increased likelihood that they do not have access to, or money for purchasing gym memberships. Coincidentally, many of these women do not have access to healthy eating options either. A study by Lopez (2007) revealed that the formation of a neighborhood, perceived neighborhood safety, area deprivation, and the access to healthy food options versus a multitude of fast-food industries have been discovered as factors that could be affecting obesity rates. However, this research also suggests that supermarkets and other healthier types of food options are less likely to be found in lower income, non-white neighborhoods.

Discovering the cause of these disparities is the key to solving the problem of obesity within this group. There is a statistically significant association between socioeconomic status, sedentary activity, and fruit and vegetable intake (Knox-Kazimierczuk & Shockly-Smith, 2017). Social upbringing and health education have been thought to play a part in this. A study done comparing Afro-Caribbean women to African Americans showed that childhood social factors are key components of the disparities in obesity of African American women (Barrington, 2017). There could be a number of economic, mental, and even cultural explanations for this. Some studies suggest that the difference in obesity rates between European Americans and African Americans may be due to a difference of perception of body image among European American

women and African American women. Research shows that African American women are less concerned about their weight. This may be the reason that they consume more calories because they are not as worried about their weight as European American women (Schuler et al., 2008). Using body mass index as a measure of obesity, this study found that African Americans tend to underestimate their body shape and this could be contributing to the high rates of obesity seen in their population. Given the health disparities among African American women, it is imperative to understand the predictors of health to help inform best practices for prevention and intervention. The inappropriate coping skills that are used to suppress the everyday stress responses could also be contributing to the high rates of obesity within the population of African American women (Tan et al., 2017). Stress experienced by African American women may be a key contributor to health outcomes and is a topic that should be further explored.

Psychological Stress in African American Women.

Psychological stress is defined as the moment in which a person perceives that environmental demands tax or exceed their adaptive capacity (Cohen et al., 2015). There are also different components of stress. These components consist of stressors and a stress reaction, sometimes referred to as a stress response (Wirtz & Kanel, 2017). According to Wirtz & Kanel, 2017, there has been a change in the way these components are viewed and understood. Recently, researchers have made it a point to distinguish between the stressor and the stress response. Whereas a stressor is considered to be “stress reactivity evoking external and internal stimuli” and the response that is elicited is the stress reaction. Although, the above definition may represent a general description of stress, individuals can experience stress in a number of ways. Some stressors can be considered significant traumas (Gillespie et al., 2009), while others could be everyday stressors (Ajrouch et al., 2010).

There is a phenomenon that African Americans are exposed to that has been defined as race related stress (Hill & Hoggard, 2018). Race related stress stems from a multitude of situations. These situations include, but are not limited to, low quality healthcare, adverse environmental factors, and racial discrimination. Concurrently, studies have shown that there is a positive relationship between discrimination and distress (Williams et al., 2008). Unfortunately, research indicates that African American women are affected even more by discrimination due to the fact that racism is compounded with sexism (Perry et al., 2013).

“African American women are especially challenged by a multitude of social conditions that are related to increased risk for poor mental health” (Keith & Brown, 2010, pg. 291). One study shows that African American women may also be burdened with an inner complex referred to as the Superwoman Schema (Woods-Giscombé, 2010). This schema was defined by an obligation to demonstrate strength, the suppression of emotions, resistance to being vulnerable or dependent, having determination to succeed, and feeling an obligation to help others. In the study, African American women reported that the Superwoman Schema has both positive and negative elements; while these women place a high value on preservation of self, family, and community, they also experience relationship strain, stress-related health behaviors, and stress embodiment.

A similar study reveals how African American women are forced to take on the role of the Strong Black Woman (Yu-Hsin et al., 2019). This study identified this role as a type of schema that causes the African American woman to be seen as a pillar of strength, a caretaker, and a person capable of taking on multiple roles. Internalizing this schema can be taxing to the mental health of African American women. Results of the study found that the Strong Black Woman schema is directly related to depression, anxiety, and loneliness, resulting in these

women being more susceptible to mental health issues and feeling more isolated. The Black woman's desire to be a leader, a nurturer, a caregiver, and "take on the world" has many consequences where health is concerned.

Many Black Americans, women included, feel that they have to "pass for normal" and make others believe that they are well while they are struggling (Evans, 2017). These issues are of extreme importance because many times people forget to consider the small everyday stressors that African American women face. The main everyday stressors that were defined for African American women in low-income neighborhoods included having limited resources, role-functioning, relationship conflict with family and men, health concerns, loss (i.e., death, divorce, or the loss of a job), racism, and work (Hamilton-Mason et al., 2009).

Although many African American women are exposed to trauma (Gillespie et al., 2009), the cost of treatment and location of therapeutic services can be a burden (Dutton et al., 2011). Even the mundane task of paying bills can be a source of anxiety and stress for African American women. Most times, economic survival for these women depends upon financial support from network members (Ajrouch et al., 2010). Additionally, African Americans have the lowest rates of marriage and highest rates of divorce in any racial and ethnic group in America (Chambers & Kravitz, 2011). Forty-three percent of Black households are headed by single women (Hamilton-Mason et al., 2009). This could be due to African American's low rates of marriage, high rates of divorce, or the high incarceration rates of many African American males. African American males only make up 5% of the population, but they make up 50% of the prison population (Perry & Bright, 2012). Situations like this end up adding to the economic turmoil that African American women face. This statistic may be a result of the stressor referred to as relationship conflict that is endured by many African American women.

Coinciding with relationship conflict, studies show that intimate partner violence is higher in African American couples than any other racial group (Langhinrichsen-Rohling et al., 2012). Intimate partner violence can be threats or behaviors that are physically, emotionally, psychologically, or sexually detrimental. Married African American women are 2.36 times more likely to experience severe partner violence than are married European American women (Al'Uqdah et al., 2016). The importance of family and community are central elements of the African American woman's internalized Superwoman complex (Woods-Giscombé, 2010). Perceived threats to the family or community have negative effects on the stress and mental health of these women.

A study conducted on low income, African American women and children found that maternal PTSD is a predictor of parental distress (Cross et al., 2018). One study defined the theoretical framework of the effect of poverty on parenting as the Family Stress Model (Cassells & Evans, 2017). Three factors that have been shown to affect the Family Stress Model are depression, family structure, and neighborhood environment (Cassells & Evans, 2017). The antithetical relationship between socioeconomic status and stress load could be attributed to situations concerning poverty and these women's responses to chronic stressors and hindrances (Tan et al., 2017).

Impact of poverty and environment on African American women's stress. African Americans are more likely to live in poverty than other Americans (Firebaugh & Acciai, 2016). African Americans are nearly four times more likely to live in a neighborhood where the poverty rate is 40% or higher (Santiago et al., 2011). However, poverty rates are particularly high for African American women. Women in general are 35% more likely to live in poverty, and 23.1% of African American women live in poverty. These rates are higher than the poverty rates for

Native American women (22.7%), Hispanic women (20.9%), and Asian women (11.7%) (Tucker & Lowell, 2015). It is no secret that poverty can in turn influence your neighborhood or environment. Research has found that neighborhood disadvantage has a significant relation to allostatic load (Tan et al., 2017). Santiago et al. (2011) conducted a study that looked at environmental factors such as income, socioeconomic status (SES), neighborhood disadvantage, and poverty related stress in relation to different psychological problems. The study found that stress induced by poverty was related to symptoms of anxiety and depression, among other issues.

A study conducted by Chang et al. (2016) compared stress in different locations and environments in nature. The study found that visiting the most environmentally natural setting yielded a significantly lower stress response. Crime, poverty, and disorganization make urban areas the opposite of environmentally natural. There is no surprise then that these kinds of environments can have the opposite effect. A study by Weisburd & White (2019) showed that communities with higher crime rates experience issues such as disorganization, weakened social connections, problems in adolescent development, substance abuse, chronic diseases, and higher mortality rates. Their results went on to show that “hot spots”, streets with high crime rates, show evidence of poor mental and physical health and are places of general disadvantage. This study’s data revealed that roughly 75% of residents that live on hot spot streets were discovered to be smokers, compared to 47.9% of people on cold spot streets.

Women living in poverty in the United States are at risk for depression, anxiety disorders, and post-traumatic stress disorder (Golin et al., 2016). A study conducted by Gillespie (2009) examined environmental risk factors for post-traumatic stress disorder (PTSD) within a low income, primarily Black, population. They used surveys, and interviews to receive self-reported

accounts of different forms of trauma. Their results showed that 87.8% of the sample reported that they had experienced a significant trauma. The most common forms of traumatic experiences were accidents. It is alarming to note that following accidents on the list of traumatic events were violence and sexual assault. Their data revealed that PTSD and depression were highly prevalent conditions within this group.

We often see that the effects produced by socioeconomic status and neighborhood environments are not short lived. The stress that is produced from living in these conditions can eventually lead to lasting mental health issues as well. Trauma contributes to chronic stress and related disorders in women, while the environment that they are subjugated to shapes the way that they respond to stress (Gaffey et al., 2018). Studies have shown that African Americans who live in urban areas are exposed to high levels of trauma even at a young age (Gillespie et al., 2009). Childhood trauma can include exposure to community and domestic violence and is also related to food addiction (Stojek, 2019). A study conducted by Algren et al. (2018), using residents of similar sociodemographic and socioeconomic characteristics to compare stress in deprived neighborhoods versus non-deprived neighborhoods, found that those in deprived neighborhoods had higher rates of perceived stress. The study found associations between economic deprivation, disposable income, and perceived stress.

Neighborhood disadvantage also increases biological risks (Tan et al., 2017). The cause for this could be due to a vast number of different reasons. These potential factors include limited access to healthy eating choices, increased psychological stress, and limited access to health care (Chauvet-Gelinier, 2016). Food deserts, not many healthcare facilities, and health problems related to stress. This can be further explored when studying the effects that certain stressors have on somatic health.

The Stress and Health Relationship

High stress rates have been linked to many different health risks including heart disease, obesity, and psychological disorders (Chang et al., 2019). Other examples include depression, anxiety, insomnia, autoimmune disorders, skin conditions, and even neurodegenerative diseases (Rizer et al., 2016). Cardiovascular disease is one of the most predominantly discussed diseases associated with stress. Epidemiologic studies and smaller research projects alike have shown that cardiovascular disease is linked to psychological stress and PTSD (Cohen et al., 2015). Even slight exposure to a naturalistic stressor, such as taking a test, is associated with increased markers of inflammation, which in turn predict risk for cardiovascular disease (Marsland et al., 2017).

When stressors are measured, it is evident that they have detrimental effects on mental and physical health (Thoits, 2010). A study using public speaking as a type of stressor showed that a person who shows greater physiological reactions to acute stressors and also has a long recovery period is at a greater risk for coronary heart disease (Wirtz & von Kanel, 2017). If the act of taking a test or speaking in public can produce such extreme consequences, it is startling to imagine how prolonged exposure to multiple stressors can affect the body. Stress not only affects health directly, but it also affects health indirectly. Groesz (2011) found that stress has been shown to increase rates of food intake. This phenomenon can be linked to stress eating. Research shows that even people who get higher scores in dietary restraint (consciously limiting food intake to maintain or lose weight) eat more during times of stress as well (Roberts et al., 2012). Indirect effects from discrimination have been shown to predict problems with substance abuse and physical health problems (Gibbons et al., 2014). Therefore, females within the African American community are more susceptible to a plethora of diseases and ailments.

Health disparities within the African American community include negative birth outcomes, lupus, and untreated depression. Some studies have inferred that these health disparities in African American women can be attributed to stress and coping (Woods-Giscombé, 2010). Eating unhealthy foods is just one of the inadequate methods that people use for coping with stress. Other insufficient coping methods include smoking cigarettes and substance abuse. These mechanisms, compiled with the lack of motivation to want to engage in physical activity when one is stressed work to create a perfect storm of unhealthy habits (Algren et al., 2018). There is evidence stating that chronic stress and a lack of social support in minority women may play a vital role in increasing the risk of cardiovascular disease for this population. Coping mechanisms, along with psychological stress appraisal, biology, and chronically stressful environments can all be linked to increased cardiometabolic risks, type 2 diabetes, and cardiovascular disease (Robins & Kliewer, 2019).

When looking at groups like African American Women, we can see how factors like poverty, neighborhood, and societal pressures can lead to high stress and poor mental and physical health outcomes. As previously stated, the population of women in the United States that are most susceptible to living in poverty are African American women. Stress due to socioeconomic status has also been shown to have a connection to health issues like cardiovascular disease (Chauvet-Gelinier, 2016). Additionally, household poverty rates have been shown to effect somatic health issues including chronic kidney disease (McClellan et al, 2010). As aforementioned, obesity is a condition that leads to the rise of many other concerning health issues and affects many African American women. We have also seen how environment plays a big role in the psychological stress experienced by this population. It is for this reason that we must pay attention to how stress and health are impacted in relation to these factors.

For years, studies have found a relationship between the risk of obesity and urban sprawl (Lopez, 2007; Singh, 2010). Lopez (2007) states that urban sprawl is characterized by decentralization, low density land uses, and automobile-focused transportation systems. A study conducted by Singh, (2010) found that there was a 30% to 60% higher chance of obesity and being considered overweight among children living in unsafe neighborhoods. Similar results were found in another study that compared four different types of neighborhoods (Saelens et al., 2012). The neighborhoods compared were those who were perceived to have high physical activity environments and low nutritional environments, low physical activity environments and high nutritional environments, those that were low on both measures, and those that were high on both measures. The results showed that children residing in high physical activity and nutritional environments were less likely to be obese and overweight than children from neighborhoods that were low on both levels. Parents in neighborhoods high on both measures were also less likely to be obese. Statistics show that 54% of women who are considered to be low income are also overweight or obese before pregnancy (Chang et al., 2016). Environments like this not only affect weight in later life, but they have been shown to also have an effect on birth weight as well. When looking at sources of stress, birth weight was significantly impacted by neighborhood disorganization (Holland et al., 2009).

Due to the many instances of individual and institutionalized racism experienced by African Americans, it is of vital importance to study the sociocultural factors that surround African Americans when examining stress and health. Racism and other forms of oppression adversely impact child birth, parenting, and economic and health disparities (Smith & Landor, 2018). Discriminatory stress adds disproportionate stressors that lower status for disadvantaged groups. Experiences of discrimination have been reported to show significant associations to

self-rated poor health, chronic health conditions, disabilities, high blood pressure, psychological distress, anxiety disorder, and major depressive disorder (Thoits, 2010).

Studies have shown that psychological stress may play a role in why African Americans are at a much greater risk of death due to cardiovascular diseases than are whites (Schneider et al., 2012). This could be attributed to the lack of healthy eating behaviors that are demonstrated among African Americans during times of stress. Studies show that the foods that are consumed as coping strategies are almost always high in fat (Pickett & McCoy, 2017). The way that people cope with stress is dependent upon the way in which stress is conceptualized (Jones, Sternberg et al., 2018). A study by Assari et al. (2016) showed that neighborhood related stress does in fact lead to obesity in later life. Their data showed that fear of neighborhood violence as a teenager predicted BMI changes from ages 21 to 32 among African American women. With such high rates of stress and trauma in African American women, it is no surprise that obesity is more prevalent in these populations than that of any other race (Agyemang & Powell-Wiley, 2013).

Goals of the Current Study

The goals of the current study were to examine the unique stressors that plague African American women and to examine the relationship between stress and health. Specifically, the project aimed to describe the specific types of stressors experienced by African American women and to examine the relationship between stress type and overall health and BMI. It was hypothesized that stress would have a significant impact on health. It was predicted that participants who experienced more stress, would report poorer overall health and have a higher BMI. Additionally, a goal of the current study was to examine how the stressors related to one another. The purpose of this was to discover which stressors are interrelated.

Methods

Participants

The current study utilizes secondary data from a larger study of Head Start families in Detroit, Michigan. Therefore, all participants were parents or primary caregivers of a preschool age child and met low-income criteria for Head Start enrollment. This study included a sample of 100 participants. An overview of participant demographics can be seen in Table 1. All of the participants who took place in the study were women. The sample of women primarily self-identified as African American (n=91; 92%). The mean age of the women within the study was 29 years old (SD=7.7). The percentage of participants that reported having a high school education was 61%. Those with a college education or higher constituted 33%. Within the participant sample, 62% reported being single, 20% reported being married, 14% reported being single and cohabitating with a partner, while 2% reported being divorced. An analysis of annual income showed that 52% of participants had an annual income of below \$5,000. Those with an income between \$5,000 and \$20,000 made up 36%. Only 12% of the participant sample made over \$20,000. All participating women were either the mother or primary caregiver for a preschool aged child between the ages of 3 and 5 years old who is enrolled in Head Start preschool in Detroit.

Procedures

The participants and procedures used in the current study were part of a larger study of women caregivers and their children who were enrolled in Head Start preschool in Detroit. Thus, Head Start preschool was the central recruitment site for this project. A convenience sample of 100 mothers and female caregivers of Head Start preschoolers were recruited for the study.

Table 1

Demographic Characteristics

Mother's Age	Mean: 29.3 (S.D. 7.2) Range: 18 – 55 years
Mother's Race	100% African American
Mother's Education	62% H.S. Grad or less 32% College
Marital Status	74% Single
Annual Income	52% < \$5,000 36% \$5000 – 19,000 12% > \$20,00
Number of Children	Mean 2.3 (S.D. 1.4) Range: 1-8

Participants were gathered on a volunteer basis. The participants were sought for participation at Detroit Head Start monthly parent meetings, during drop off or pick-up times, or at other Head Start functions. Mothers and caregivers completed an informed consent form which was both orally described to the participant by the researcher and read by the participant. Through the informed consent process the participant was made aware that all participation was voluntary. The participants' ability to withdraw from the study at any was clearly communicated during the process as well. After the consent process, participants completed a self-report survey. The survey included questions about the participant and their child. The survey took approximately 30 minutes to complete. Mothers and caregivers completed the surveys at the Head Start centers

in private meeting rooms. Following completion of the surveys, mothers and caregivers were each compensated with total cash amount of \$10 for their participation. The Head Start agency granted permission to collect data at their centers. Human Subject approval was granted by the Institutional Review Board (IRB) at Eastern Michigan University.

Measures

Demographics

Participants completed a measure to assess demographic information. The demographic questionnaire was developed by the principal investigator of the larger study and included components such as participant age, race, education, and family income.

Participant Health and Body Mass Index

Participants completed a self-report measure that assessed overall health and body mass index (BMI). Participants were asked to rate their overall health on a scale of 1 to 5 (extremely poor to excellent). Participants were also asked to self-report their current height and weight. Height and weight were then used to calculate BMI using the following formula: $\text{weight (lb)} / [\text{height (in)}]^2 \times 703$. The Center for Disease Control and Prevention (2020) categorize body mass according to the following labels shown in Table 2. The current study used the raw, interval level BMI score in analyses.

Table 2

BMI Categories

Underweight	< 18.5
Healthy weight	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	≥ 30.0

African American Women's Stress Scale (AAWSS)

Stress was assessed with the use of a condensed/modified version of the African American Women's Stress **Scale (Add the reference here)**. The original scale contained 100 stressors that represented role related and relationship concerns, as well as economic, ethnic, and work-related issues. The condensed version used in the current study contained 47 items representing those same stressors. The subjects were asked to report on the stressors that they had experienced within the past 6 months. Participants were asked to rate each item on a scale of 0 – 4 (ranging from “did not experience” to did experience the stressor and found it “highly stressful”). For this study's purposes, measure items were broken down into Economic Stress, Relationship Stress, Neighborhood Crime, Child Stress, and Health Stress subscales. Composites were then created by getting an average score across subscale items. Economic stressors included stressors that related to having the means to afford wants and needs. This stress subscale included 10 items that assessed different aspects of financial strain that were then put into one composite which was an average score on a range from 0-4. The ranges included 0 being that the event did not happen, 1 being that the event happened but was not very stressful, 2 being that the event happened and was somewhat stressful, 3 being that the events happened and was quite stressful, and 4 being that the event happened and was highly stressful. Individuals with a score of 0 were retained in the analyses because having not experienced the event was deemed a meaningful contribution to considering overalls stress in African American women. The Relationship Stress subscale included issues with partners, family, and friends. This subscale included three items that assessed different aspects of relationship conflict. Neighborhood Crime Stress was a single item stressor, so it was the only subscale that was not made from a composite

of multiple items. The Child Stress subscale included parenting stressors such as helping with homework and was composed of three items that related to stress experienced by the parents that was about the child. The Health Stress item was made up of two items that related to overall health and weight. Mean composite scores and raw item scores were used in the analyses for the current study. For a complete list of the items from the African American Women's Stress Scale included in the current study's stress subscales, see [Appendix A](#).

Statistical Analysis

Analyses were conducted using SPSS 23.0 software. Descriptive statistics and correlations were run between study variables. Analyses included an examination of frequencies, means and standard deviations of study variables. Bivariate correlations were also run between study variables including, economic stress, neighborhood crime stress, child stress, and relationship stress and the overall health and BMI of the mothers. The study also looked at how the stressors were interrelated. The variable means and standard deviations were calculated with the use of SPSS. The stressors with higher means were identified as high stress variables. The stressors that were found to be most correlated to health outcomes were listed as health-related stressors.

Results

Descriptive Analyses

Stress Scale

Table 3 shows descriptive statistics for the individual stress scale items used in the current study. The table shows the items mean, standard deviation, and the percent of participants who experienced that particular stressor. As can be seen in the table, being on welfare was one of the most experienced events with 53% of the sample reporting having been

on welfare in the last 6 months. From our sample of women who reported being on welfare, only 18% reported that it was not very stressful.

Child stress items were not as highly endorsed of a stressor as some of the other items, except for one (See Table 3). The item that was endorsed most frequently was “having to tell your child something over and over”. With 80% of mothers reporting that event. Additionally, 12% of the sample rated it as being highly stressful.

Table 3 also shows that the average scores for stress due to “depending on someone who didn’t come through” and “living in a neighborhood with high crime” were relatively high overall (Mean = 1.22 and 1.37, respectively). 20% of participants rated depending on someone who didn’t come through as not very stressful, while 12% of participants rated depending on someone who didn’t come through “highly stressful.” 25% of participants rated living in a neighborhood with high crime as not very stressful, while 10% of participants rated living in a neighborhood with crime “highly stressful.”

Overall, endorsement of health stress was low (See Table 3). 44% of women reported being overweight on the stress scale. 20% of those women did not find this very stressful, while 5% reported being highly stressed by their belief that they were overweight.

Descriptive Statistics for the subscales from the African American Women’s Stress Scale can also be seen in Table 3. These composite variables take into account the multiple individual items and are an average from the scale, with 0 being that the event didn’t occur and 4 being an event that occurred and was highly stressful. The Crime Stress subscale (which was a single item) had the highest overall mean of the stress subscales (Mean = 1.37).

Health Variables

The average BMI for the current sample was 30.78 (*S.D.* = 7.22). Out of our sample, 25% were in the healthy weight range. Another 25% of the sample was in the overweight range. 50% of the participants were in the range that would be considered obese.

For the self-reported overall health item, the average score on a scale that ranged from 1 (extremely poor) to 5 (excellent) was a 3.94 (*S.D.* = .80). Twenty-six percent of the sample rated their health as “excellent.”

Correlation Analyses

Table 4 shows the bivariate correlations between demographic characteristics, stress subscales and health. The stressors included economic stress, child stress, relationship stress, neighborhood crime stress and health stress. A key goal of the current study was to examine the relationship between stress and health. Therefore, table 4 shows these correlations. As can be seen in the table, economic stress was significantly correlated with overall health ($p < .05$). The more economic stress the participant reported, the poorer the overall health was reported to be as well. Economic stress was marginally correlated with BMI ($p < .10$). This means that a trend existed where, as economic stress increased, so did BMI. Crime stress was also marginally, significantly related to overall health ($p < .10$). This trend suggested that as stress from living in a crime filled neighborhood increased, overall health decreased. Health stress was significantly related to overall health ($p < .01$) and BMI ($p < .01$). As health stress increased, reported overall health decreased and BMI increased.

Age was marginally, significantly related to overall health ($p < .10$). This suggests that as age increased, overall health decreased. Age was also significantly related to BMI ($p < .05$). As age increased, BMI also increased. Age was significantly correlated to health stress as well ($p < .05$). As age increased, health stress also increased.

Education was significantly related to child stress ($p < .01$). This suggests that as Education increased, child stress decreased. Child stress was also significantly related to relationship stress ($p < .01$). As child stress increased, relationship stress increased. Child stress was also significantly related to health stress ($p < .05$). As child stress increased so did health stress. Additionally, child stress was significantly related to crime stress ($p < .05$). As child stress increased, crime stress also increased.

Relationship stress was significantly related to health stress ($p < .01$). This means that there was a trend shown that as relationship stress increased, so did health stress. Crime stress was significantly related to health stress ($p < .01$). As crime stress increased so did health stress.

Table 3.

Descriptive Statistics for Stress Subscales and Individual Stress Items

Item on Stress Scale	Mean (S.D.)	% experienced event
<i>Economic Stress Subscale</i>	.85 (.90)	
Being on welfare	1.27 (1.51)	53%
Unable to afford necessities for your children	.62 (1.23)	25%
Being behind in bills	1.17 (1.41)	51%
Can't afford things your children want	.58 (1.13)	29%
Living in housing in need of repairs	.78 (1.27)	36%
Bill collectors harassing you	.78 (1.23)	38%
Unable to afford dinner out or entertainment	.49 (1.01)	26%
Car trouble	.96 (1.31)	44%
Unsure you can pay rent, utilities, and buy food	.79 (1.26)	35%
Unable to find a job in the area of training	1.07 (1.44)	45%
<i>Child Stress Items</i>	.86 (.81)	
Having a hard time helping your child with homework	.34 (.85)	20%
Having to tell your child something over and over	1.57 (1.28)	80%
Getting children ready in the mornings	.67 (1.05)	41%
<i>Relationship Stress Subscale</i>	.92 (.98)	
Depended on someone who didn't come through	1.22 (1.40)	55%
Argument with family member/friends/acquaintance	.78 (1.18)	41%
Argument with your husband/partner/man/woman	.75 (1.16)	38%

<i>Crime Stress Subscale</i>	1.37 (1.40)	
Living in neighborhood with high crime, drugs, fighting	1.37 (1.40)	65%
<i>Health Stress Subscale</i>	.76 (1.04)	
Being overweight	.81 (1.13)	44%
Being ill/having a health condition yourself	.70 (1.25)	30%

Correlation Analyses

Table 4

Bivariate Correlations between Study Variables

	1	2	3	4	5	6	7	8	9
1. Age	1								
2. Education	-.02	1							
3. Overall Health	-.20 [†]	.08	1						
4. BMI	.25*	-.03	-.27**	1					
5. Economic Stress	.12	-.07	-.34**	.20 [†]	1				
6. Child Stress	.04	-.27**	-.16	.03	.50**	1			
7. Relationship Stress	.02	.03	-.06	.13	.61**	.42**	1		
8. Health Stress	.23*	-.01	-.44**	.40**	.62**	.20*	.40**	1	
9. Crime Stress	.05	-.05	-.18 [†]	.05	.21*	.24*	.09	.28**	1

[†]p < .10, *p < .05, **p < .01

Discussion

The results show that the data supported the study's hypothesis that stress would be significantly related to health. Economic stress and health stress were significantly correlated to overall health and BMI in the current sample of primarily African American women. As economic and health stress increased, reports of poorer health and BMI increased. The stress from living in a neighborhood with crime was marginally related to overall health; as crime stress increased, overall health decreased. As aforementioned, there are major disparities amongst obesity rates that are dependent upon gender, race, and socioeconomic status (Arroyo-Johnson & Mincey, 2016). Due to the fact that this study utilized a sample of African American Women whose incomes were mostly below \$5,000, it is intuitive to see why economic stress and health stress were related to the health of this sample. It makes sense that someone's health status would relate to the stress they feel about their health. However, this significant correlation does show that women had an awareness about their health and poorer health and higher BMI increased feelings of stress.

Economic stress was an important scale in the current study. It had a significant correlation to overall health and is an important factor in thinking about the unique stressors that African American women face (do you have a ref from your lit review you can put here?). The most stressful item on the economic stress subscale within this sample was being on welfare. Some studies suggest that welfare programs do not provide sufficient support for African Americans (Kardile, 2020). The toll that financial burden takes on psychological stress has been shown to be linked to several diseases. A few of these health risks include heart disease (Wirtz & von Kanel, 2017), chronic kidney disease (McClellan et al, 2010), and obesity (Lopez, 2007;

Singh, 2010). This supports the idea that the stress of economic hardship and trying to provide for one's family can take a toll on physical health, but it also takes a toll on mental health. Economic hardship has been shown to be related to health issues such as cardiovascular disease as well (Chauvet-Gelinier, 2016) mental health issues (Santiago et al. 2011), and obesity (Arroyo-Johnson & Mincey, 2010).

With relation to the relations between economic stress and BMI, the women that we sampled likely can't afford to access the resources that are typically needed to pursue a healthy lifestyle. Access to certain physical fitness studios, gyms, healthy food options, and quality healthcare can all be influenced by finances. If the highest stressor for these women is economic, it is doubtful that they are able to spend money on luxuries like gym memberships, home workout equipment, or diet plans. One study shows that there is a relationship between socioeconomic status and fruit and vegetable intake (Knox-Kazimierczuk & Shockly-Smith, 2017). This is probably due to the fact that many low socioeconomic neighborhoods are considered food deserts. African Americans who live in these areas do not usually have access to a variety of healthy food options. Seeing as overall health was related to economic stress and health stress these ideas support the findings of this study.

There was a marginal relationship between crime stress and health. Neighborhood crime stress was also associated with health stress, economic stress, and child stress. This is also supported by past research. Neighborhood crime has been related to increased fear and less walkability in neighborhoods. The fear of neighborhood crime can cause people to feel unsafe in their neighborhoods and therefore cause them to not take walks around their neighborhood's. This can increase sedentary behavior and heighten the risk of obesity. Walkability is related to

different forms of physical activity, but the crime in one's neighborhood limits this activity (Richardson et al., 2017).

The current study did not find a significant relationship between relationship stress and health or child stress and health. This was not consistent with the study hypotheses. It is possible that this type of stress is not related to health in general or in this sample. However, it is also possible that these relationships were not significant because of the specific factors of relationship stress and child stress that the study looked at. While acts like repeating yourself over and over to your children or getting them ready in the morning may cause stress, it may not be a constant or extreme enough stressor to cause major health issues. Likewise, arguments or disagreements with friends, family, or a spouse may be stressful, but not as stressful as something like the death of a friend or family member, a divorce, or a spouse being incarcerated.

While looking at the relationship between stressors we can see from the data that the various stress subscales were positively related to one another. All stress subscales were related to one another except relationship and crime stress. Overall, these results suggest that experiencing one type of stress likely means that the individual will also experience other types of stress in this sample. It is plausible that economic stress is the driver of this relationship, although additional research would be needed to examine the relative impact of these types of stressors. However, for example, the relation between economic stress and relationship stress could be due to the fact that a lot of monetary support for African American women comes from their family unit or social circle (Ajrouch et al., 2010). Additionally, studies show that many times Black women may overplay their role in order to provide for others.

Taking care of everyone else before themselves is a characteristic that has been attributed to many African American women as a part of the Strong Black Woman Schema (Yu-Hsin, et

al., 2019) and the Superwoman Schema (Woods-Giscombé, 2010). Both of these schemas have been shown to increase depression, anxiety, loneliness, relationship strain, stress-related health behaviors, and stress embodiment. Considering that many of these women were single parents, it could be hypothesized that they may have felt the need to internalize the Strong Black Woman or Superwoman Schema. Taking care of children without the moral support or financial support of a spouse can result in strain. In turn, this could have negative effects on their health, causing them to have significant stressful thoughts about their health. It is important to note that child stress was related to mother's education level. So as education level increased, child stress decreased. This may be because of the fact that higher education typically means access to higher paying jobs and less economic stress. So, in that way, education and economic means may drive many other stressors for African American women.

Additionally, crime stress being associated to child stress could be due to parent's fearing for the safety of their children and trying to keep them out of trouble. The criminal justice system and its impact on African American families is a stressor that should be further investigated. While worried about the safety of their children in relation to neighborhood crime, parent's may also be worried about their children's safety in relation to police brutality and the disparities in the conviction rates of African Americans. African American males only make up 50% of the prison population, but only 5% of the population (Perry & Bright, 2012). The Perry and Bright statistics suggest that some African American women may know or have had someone close to them be incarcerated. If this person is a spouse or child that can cause extra stress, and many mothers probably have high stress rates about their children being racially profiled or being victims of police brutality.

Neighborhood crime may have been associated with health stress because living in a neighborhood with high crime has been shown to have adverse effects on mental and physical health. In addition to walkability being impacted by neighborhood crime, other research suggests that the formation of a neighborhood, how safe one's neighborhood feels, area deprivation, and the access to healthy food options versus several fast-food options have been discovered as factors that could be affecting obesity rates (Lopez. 2007). Weisburd & White (2019) found that several issues such as disorganization, weakened social connections, problems in adolescent development, substance abuse, chronic diseases, and higher mortality rates could be attributed to neighborhood crime. Other health issues like depression and PTSD from violence have been shown to be prevalent in African American populations for those in unsafe neighborhoods (Gillespie.2009).

Finally, it is worth noting that the data from the current study showed that BMI was significantly related to overall health. This is probably due to the fact that only 25% of our sample was in a healthy weight range. The other 75% were either overweight or obese. African American women have higher obesity rates than many other races. Hispanic women (Tan et al, 2017), European American women (Lynch, 2014), and Afro-Caribbean women (Barrington, 2018) all have lower rates of obesity than African American women. As was discussed, this can be due to stress and finances, the neighborhood environment, and poverty (Akil & Ahmad, 2011). The stress from not being able to afford the lifestyle that you want or that is needed to maintain health, can lead to obesity.

Obesity, in turn has been linked to many other diseases. Diseases such as hypertension, type 2 diabetes, coronary heart disease, stroke, infertility, and certain cancers can all be linked to obesity (Brewer & Balen, 2010; Hruby et al., 2016). Our sample represents the greater

population of African American women who are at a low socioeconomic status. If 75% of this sample is overweight or obese and obesity is linked to all of these diseases, it is a clear indicator that there are many African American women in the general population who are probably having similar experiences with their health. Since obesity is one of America's leading causes of death (American Heart Association, 2016) and half of our sample fell into the range of obese, it is easy to imagine what these numbers look like on a grand scale. This may be the reason that the mortality rate for African American women is so high when compared to European American women (Williams, 2009). Age was also related to BMI and health stress. This was expected, due to health issues typically progressing with age and therefore causing the stress about these issues to progress.

Limitations of the Current Study

The primary limitation of the current study is that it was a correlational study. This means that the study was not able to determine the directionality and causality of the results that were found. Future research should utilize the benefits of a longitudinal design to examine the impact of stress on health. Another limitation was that this study utilized self-reported data for health, height, and weight. Future research should try to incorporate more objective assessments.

Conclusion

Research shows that family, the desire to nurture and lead, and neighborhood and community are central aspects of the life of an African American woman. Unfortunately, it is in these same areas that these women are at increased risk for negative outcomes. Family relations are impacted by divorce and Black male incarceration rates, the desire to nurture and lead can lead to psychological stress, such as burnout and feelings of isolation and depression and finally,

neighborhood and community can cause stress in the form of fear and lack of resources. Additionally, the experiences of racism and sexism may lead to stressors especially relevant for Black women. Overall, African American women are experiencing unique stressors that puts them at increased risk for health disparities.

African American women disproportionately experience obesity and studies have shown that obesity is the cause of many other health factors, such as cardiovascular disease, type 2 diabetes, and hypertension. These health conditions are considered to be lead causes in mortality rate disparities among African American women and European American women. Based on the literature, we can infer that the stress of poverty and living in a low-income neighborhood is a significant factor impacting the mortality rate of African American women.

There are several implications from the literature and the current study that can be gathered. In order to reduce health disparities among African American women, we must consider the stressors and challenges facing this population. Promoting resources for this community is important. For example, it may be important for resourceful businesses to be built in low-income neighborhoods that aid in finances, promote mental health services, and that endorse healthy eating and physical activity. Financial assistance agencies to help with money management, investment, and planning could aid in alleviating some financial burdens that are experienced by African American women.

Financial aid for mothers with an incarcerated spouse and reentry to society programs for previously incarcerated males could help mothers whose family unit was negatively impacted by the criminal justice system. Mental health practices could be a source of assistance in restoring relationship disorganization and violence prevention and could be useful for general counseling needs. Childcare services could reduce stress for single parent women. Additionally, grocery

stores, gyms, and fitness studios could aid in obesity prevention and possibly create more job opportunities and recreational practices, which could in turn lower crime rates in these communities. The focus on the unique stressors contributing to health disparities offers insight into many areas where intervention could vastly improve the lives and health of African American women.

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Appendix A

Stress Subscales and Items

Item on Stress Scale
<i>Economic Stress Subscale</i>
1. Being on welfare
2. Unable to afford necessities for your children
3. Being behind in bills

4. Can't afford things your children want
5. Living in housing in need of repairs
6. Bill collectors harassing you
7. Unable to afford dinner out or entertainment
8. Car trouble
9. Unsure you can pay rent, utilities, and buy food
10. Unable to find a job in the area of training
<i>Child Stress Items</i>
1. Having a hard time helping your child with homework
2. Having to tell your child something over and over
3. Getting children ready in the mornings
<i>Relationship Stress Subscale</i>
1. Depended on someone who didn't come through
2. Argument with family member/friends/acquaintance
3. Argument with your husband/partner/man/woman
<i>Crime Stress Subscale</i>
1. Living in neighborhood with high crime, drugs, fighting
<i>Health Stress Subscale</i>
1. Being overweight
2. Being ill/having a health condition yourself